IDG

As the intranet matures, IT challenges grow along with it. Our supplement follows page 40.

Is Microsoft too powerful? Janet Reno and Ralph Nader think so. We asked others for their opinion. Page 33

COMPUTERWORLD

The Newsweekly for Information Technology Leaders
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IBM unwraps Java client

▸ *Rejects Microsoft plan, promises Windows access*

COMDEX/FALL

For more show coverage, see pages 16, 47 and 115.

By April Jacobs and Sharon Gaudin
LAS VEGAS

IN A DIRECT SNUB to Microsoft Corp.'s network computer strategy, IBM last week unveiled a Java-based network computer and told *Computerworld* that it won't build Microsoft-sanctioned, Windows-based terminals. IBM said it will instead provide its own access to Windows-based applications.

IBM's Java client and its overall network computing strategy should give users a variety of server options and access to a wide scope of applications, said John Dunkle, president of Workgroup Strategic Services, Inc. in Portsmouth, N.H.

Those plans give IBM at least a timetable advantage over Microsoft.

Microsoft won't be ready to deliver its multiuser Windows NT, known as Hydra (see story, page 16), for several months at best. IBM's Java strategy also is a thorn in the side of Microsoft, which is pushing hard to slow the network computer momentum.

In what some observers are calling a defensive move, Microsoft last week unveiled its answer to the thin-client craze: Windows-based terminals. But the new machines won't abandon or compromise its Windows-for-all attitude. Nor will they embrace Java.

Conversely, next week, IBM will ship its Series 1000 Network Station. It costs $999 and

IBM, page 115

Web stores gearing up for big jump in holiday sales

By Sharon Machlis

WEB-BASED RETAILERS are seeing huge jumps in sales this fall, leading many to believe consumers are finally ready to do some serious holiday shopping online.

An increase in World Wide Web users, combined with more comfort with the technology, is driving the rise in electronic buying, retailers and analysts said.

"This is going to be the breakthrough year," predicted Bruce Guptill, an analyst at Gartner Group, Inc. in Stamford, Conn.

Although Internet shopping

www.hohoho, page 14

Feds force year 2000 compliance

By Thomas Hoffman

COMPANIES THAT don't have a well-defined plan for tackling the year 2000 computer problem might have to answer to Uncle Sam.

Federal and state regulators last week issued a stern warning to a small bank in Georgia to get its millennium act together.

The Federal Reserve Board and other agencies reprimanded Putnam-Greene Financial Corp. in Eatonton, Ga., and its three subsidiary banks for failing to meet a Sept. 30 deadline to detail its plans for preventing year 2000 computer snafus.

Feds, page 17

Super PROGRAMMERS

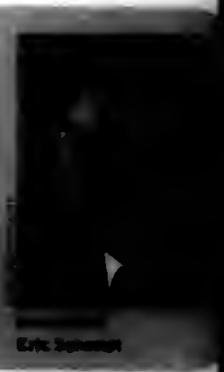
▸ *Hotshot coders shun IS departments for IPOs*

Face it. Corporate IS departments don't have much chance of hiring today's programming superstars. These hotshots would rather launch a funky software start-up — with stock options potentially worth millions — or become an independent contractor making $100 per hour.

But there's a school of thought that says IS doesn't need these mavericks. What IS needs are team players who write solid, documented and maintainable code that meets business needs.

IT Careers, page 95

What's up with Novell's turnaround strategy? Is the networking pioneer doomed to be roadkill on the highway to Microsoft's Windows NT? Novell CEO Eric Schmidt answers those questions and lays out his strategic plans in an exclusive *Computerworld* interview.



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UP FRONT

Talent search

They're young, smart, ambitious and versed in the hottest programming tools.

And they don't want to work for you.

They're the superprogrammers, America's most in-demand technical talents. But as our story on page 95 demonstrates, they are largely passing up the option to work in corporate IS. The pay, travel and glamour is in consultancies and thousands of tech start-ups, where stock options make millionaires.

I think the chronic talent shortage is beginning to make itself felt in another way.

The market for consulting and systems integration services is exploding, and the skills gap has a lot to do with that. IS executives are opting to farm out whole projects rather than put themselves into almost constant recruiting mode. And the options are becoming more attractive. As we reported last week in a front-page story, users are negotiating cheaper and more flexible outsourcing contracts. The consulting market has become very crowded, and that competition works to your advantage.

We may be seeing the beginnings of a new era in IS.

We may be seeing the beginnings of a new era in IS. Gartner Group analyst Fred Magee recently suggested that IS groups will increasingly come to resemble supercontractors. They will manage projects through a combination of temporary staff, subcontractors and external consultants.

That isn't necessarily bad. The massive, vertically integrated IS departments of the '80s have been crumbling for years in favor of smaller, more nimble project management teams. The challenge, then, for corporate IS is to develop the skills that will be needed in this new environment — project management, negotiation, procurement and contracting — and farm out the rest.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*

THE FIFTH WAVE

BY RICH TENNANT

E-mail Rich Tennant at thefsvave@tiac.net

Euro-dollar, year 2K add up to IS migraine

By Julia King
PARIS

IMAGINE AN understaffed, multimillion-dollar information systems project with ever-shifting requirements, no automated software tools and a projected zero return on investment.

That is what European IS managers face with the introduction of a single European currency.

So far, more than a dozen countries plan to replace their existing currencies, at least for wholesale trade, by 1999.

Yet the European Monetary Union has yet to decide several major and minor issues, from how to calculate interest rates to whether to place the euro sign before or after the amount

YEAR 2000 ISSUE

There is even a question about whether the euro sign itself — a bit-map image — will require hundreds of thousands of European users to upgrade their PC hardware.

Add to this that most European companies also have to tackle year 2000 projects, and it is no wonder that the mention of the euro gives most project managers a throbbing headache.

"It's a huge problem, but we can't even start to think about the euro until after the year 2000 is over," said Bernard Smith, a Brussels-based project manager at DHL Worldwide Express and an attendee at last week's ABT Corp.'s International Project Leadership Conference here.

SMALL STEPS

Beginning in 1999, DHL plans to accommodate customers and suppliers who request their financial statements in euros.

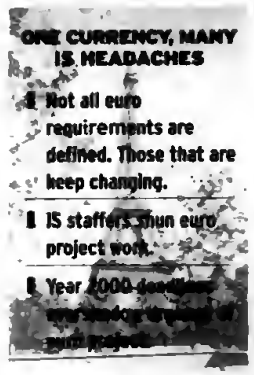
That will be done primarily with add-on translation programs.

But Smith said it won't be until after the company's year 2000 work is completed that DHL could even think about fully converting all its systems to handle the single currency.

Altos, a Paris-based software company, also plans to convert transactions into euros for customers who want euro-based statements.

It has even scheduled the necessary systems development work. But the company is running into the same kinds of hiring problems facing year 2000 project managers in the U.S.

"Young, incoming computer science people don't want to work on euro projects. They prefer to work on communications projects like the Internet and other new technologies, like Java and object-oriented languages," said Altos project director Dominique Cheese.


ONE CURRENCY, MANY IS HEADACHES
Not all euro requirements are defined. Those that are keep changing.
IS staffers shun euro project work.
Year 2000 deadlines

Cheese said one solution has been for Altos to guarantee incoming staffers that they will spend no more than six months on euro and year 2000 projects teams.

Change management is another monstrous euro issue. On one hand, managers said they have no choice but to do business in parallel currencies until all of the various euro issues are worked out.

Yet operating in two currencies for several years can backfire, managers said, because users accustomed to a choice will be even more resistant to the final euro switchover, which is now scheduled for 2002.

It is like quitting smoking, said Ivar Gubberud, chief engineer at Telenor, a telecommunications company in Bergen, Norway.

"If you're going to quit smoking, the worst thing to do is smoke one less each day. You have to just quit," Gubberud said.

ALL OR NOTHING

But so far, only a handful of companies outside of investment banks have made such a commitment. One is Siemens AG, which will conduct all intercompany transactions exclusively in euros as of Jan. 1, 1999, said Steve Warby, a project manager at Siemens GEC Communications in North Midlands, England.

Warby said Siemens now has 144 different SAP AG R/3 software projects under way to address both the euro and year 2000 issues on a worldwide basis.

Alex Woodhouse, director of investment banking at London-based Cap Gemini, said he believes that most nonbanking European companies are dangerously unaware of just how much havoc the transition to the euro will cause.

"We've got a huge awareness problem," he said. "People just don't realize that failure to comply is terminal," Woodhouse said. □

& **Bank devotes mainframe to year 2000 testing.**
Page 37

IBM boosts midtier mainframe storage

▸ *Pumps up storage, adds remote copy feature*

By Tim Ouellette

DATA CENTERS pushing the limits of IBM's Ramac Virtual Array (RVA) storage devices will get some breathing room next year, *Computerworld* has learned.

IBM officials confirmed plans to boost the RVA's current 256-volume storage address limit and add a remote copy feature that mirrors data between RVAs. The capability will be used to link remote mainframe clusters.

Although IBM promoted the RVA as a middle-tier mainframe storage system, users are pushing the box to its limits and want it to support higher capacities — at the expense of IBM's aging, high-end Ramac3 technology line.

IBM will extend the current address space on the RVA from 256 to 512 volumes in the second half of next year. That will bring the RVA up to par with other high-end arrays on the market.

The effort is similar to a telephone company creating new area codes — it gives data centers more flexibility in organizing their storage.

"The increased addresses will really ease the burden on people with limited data channels," said David Adams, director of networked services at National Life Insurance Co. in Montpelier, Vt.

For example, users testing applications for the year 2000 will want to isolate a lot of small samples of data, which take up many more address volumes, Adams said.

The RVA originally was developed by Storage Technology Corp. in Louisville, Colo., under the name Iceberg. But the two companies inked a deal last year that handed IBM sole selling rights to the product, although both have a hand in product development.

Since then, users have snapped up the boxes to take advantage of the RVA's space-saving virtual voluming capability, which uses compression so users can store more data, and its Snapshot Copy software.

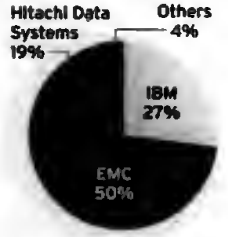
But when IBM ships higher-capacity, 9G-byte drives in the RVA next year, users could run out of address space more quickly, said John Webster, an analyst at The Yankee Group in Boston.

IBM already upgraded the performance of the RVA this summer with faster processors and more data channels to the host (CW, March 17).

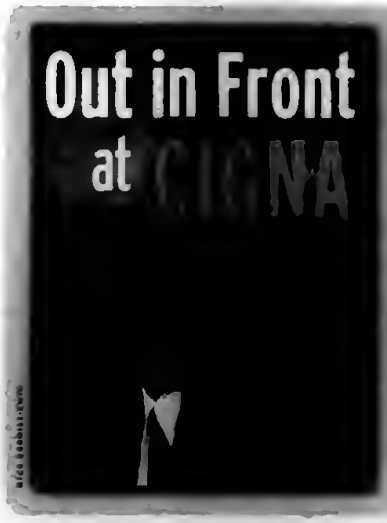
Also next year, IBM will ship a peer-to-peer remote copy feature on the RVA. That will make the RVA a key part of an upcoming clustering scheme, called Geoplex, that will create clusters of mainframes that are up to 20 miles apart. □

MAINFRAME DATA PIE

Estimated 1997 market share



Source: Meta Group, Inc., Stamford, Conn.



BUD BAUMANN was in high school in the 1970s when, in a Cobol programming class, he learned a valuable lesson that helped lay the foundation for a career. The very first words out of the teacher's mouth were, "We use technology to solve business problems," Baumann recalls. "And I've never forgotten." Today, Baumann plays a key role at Cigna Corp., which is trying to revolutionize the insurance industry.

Managing, page 79

Packaged software keeps pace with manufacturing

By Randy Weston

YOU KNOW about just-in-time inventory. Now, packaged software is coming out to support the latest factory trend: just-in-time manufacturing.

"Vendors are feeling the pressure to support these techniques," said Jim Shepherd, an analyst at Advanced Manufacturing Research, Inc. in Boston. "There are a number of huge, influential manufacturers who have been introducing advanced manufacturing techniques in their factories, and they are looking for software to support them."

ASSEMBLY LINE SUPPORT

First out of the gate is American Software, Inc. The Atlanta-based company last week announced that it has a new business process software system for manufacturing that is tailored specifically to manage just-in-time manufacturing, also known as flow, agile or demand-driven manufacturing.

Instead of using the traditional method of dividing a manufacturing process into sections, the new technique keeps the assembly line on one track so a product continuously flows through the plant from beginning to end.

The goal is to produce only products that are actually ordered by customers. Instead of making parts of each product on a set schedule, companies make entire products ready for shipment based on actual orders on the books.

American Software's new software product was designed to help manufacturers track the flow of products through the line and the impact on supplies. It also helps companies design the factory floor and manage the production of different models of a product on the same assembly line.

Shepherd said several large enterprise resource vendors — most significantly SAP AG in Wayne, Pa., and Oracle Corp. in Redwood Shores, Calif. — are promising support for the new manufacturing methods in the next release of their applications packages sometime next year. □

Nasdaq trades up network capacity

▸ *MCI pact will speed Internet transactions*

By Matt Hamblen

NASDAQ STOCK MARKET officials announced a $600 million deal last week with MCI Communications Corp. to more than double the speed and trading capacity of its electronic trading network.

The infrastructure improvements will allow Internet trading by consumers and make connections faster for traders around the country — and eventually internationally — who use Nasdaq's virtual trading floor, officials said.

Contract negotiations for the expansion were under way well before the Oct. 27 stock market plunge, officials said. During the Oct. 28 recovery, more than 1.37 billion shares traded on Nasdaq, which was able to display continuous real-time price quotes for its listed companies all day.

Still, Nasdaq officials said they foresee needing the ability to double capacity from 2 billion shares to 4 billion shares per day, which should be possible in 18 months.

"While the current system serves us extremely well, with projected increases in share volume and market participants, we need to stay ahead of the curve and enhance our system now to handle growth well into the future," said Frank Zarb, chairman and CEO of Nasdaq parent the National Association of Securities Dealers, Inc.

The new infrastructure will be based on Internet Protocol, allowing consumers to trade directly with Nasdaq.

The new infrastructure will be based on Internet Protocol, allowing consumers to trade directly with Nasdaq, officials said. Small trades, many of them online, led the rebuilding of the market from the Oct. 27 plunge, Zarb said. Nasdaq had more than 3 million visitors and 20 million hits to its World Wide Web site on Oct. 28.

Washington-based MCI built Nasdaq's current infrastructure. For the new project, it will use AlphaServer computers from Digital Equipment Corp. and routers and Gigabit Switch routers from Cisco Systems, Inc.

The MCI contract will last for six years, creating a network scalable up to 8 billion shares per day. Speeds will go from 56K bit/sec. up to 256K bit/sec. in the initial 18 months, and the network will connect traders to Nasdaq's data centers in Rockville, Md., and Trumbull, Conn., and to MCI's Network Operations Center in Cary, N.C. □

Eric Asprin trades Harveys with a PalmPilot. Mobile Computing, page 73

Jessica Goodnight left SAS Institute and much of the town it resides in. In Depth, page 91

Microsoft Exchange Enterprise Server rises to the top in a groupware tools test, page 87

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ETC.

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Data centers close window on batch time

By Tim Ouellette

IT'S OPEN SEASON on traditional mainframe batch operations.

With global business expansion, electronic commerce and the need for around-the-clock operations, data centers are slowly but surely closing the batch window that has blocked users from accessing mission-critical systems.

Batch processing does in one chunk all the transaction work systems couldn't complete online in real time. It usually takes up most of the CPU and leaves data and applications unavailable.

Sources also said EMC Corp. in Hopkinton, Mass., plans to improve its competing Timefinder software to more efficiently move data sets. That would help users with EMC Symmetrix disk arrays, which already gain some I/O speed for batch processing because of the huge amount of cache EMC places in its disk subsystems.

LESS MAINTENANCE

But storage-related options aren't the only answer. Database tools help users reorganize their mainframe data efficiently to cut down on the need for batch database maintenance.

BREAKING THE BATCH BARRIER

Daily reductions in batch processing time with IBM's Snapshot:

Base: 19 Snapshot sites

Source: Evaluator Group, Inc., Englewood, Colo.

"While batch operations are still very important and involve core business operations, there is tremendous pressure on companies to have systems available at all times," said David Floyer, an analyst at International Data Corp. in Framingham, Mass.

Although there have always been tools to streamline batch processing, today's combination of mainframe clustering technology, faster mainframe processors and high-speed data tools makes the job more achievable than ever.

Insurance Services Office, Inc. used IBM's Snapshot Copy software to cut its batch backup window. The software takes snapshots of data without interrupting operations (see chart).

"Snapshot gives us two extra hours [of production time], which in today's world is enormous," said Dick Fernandez, assistant vice president of computing services at the Pearl River, N.Y., firm.

That allowed production runs to start earlier, so actuaries can have faster access to reams of insurance claim data.

And IBM has just begun shipping Snapshot 1.2, with added support for mainframe VSAM files, which make up nearly half of all mainframe data sets.

And a combination of more powerful mainframe CPUs, such as Hitachi Data Systems Corp.'s Skyline and IBM's parallel sysplex mainframe clustering technology, reduce some of the performance problems found in older mainframes.

Still, "even as you eliminate one bottleneck, another pops up. It is my job to find the bottlenecks and get rid of them," said Robert Paceley, a data processing manager for the Palm Beach County data processing department in Florida.

The county uses Boole & Babbage, Inc.'s Hiper-Cache to streamline batch operations. The tool turns underutilized system memory into cache to improve system I/O.

Paceley is augmenting the tool by off-loading some financial reporting to a Windows NT server, freeing up more mainframe CPUs for online processing of those core transactions.

Eventually, companies may take their efforts a step further by completely designing batch processing out of their computer operations, Floyer said. But that is unlikely in the near future because of the complex and costly nature of altering core business operations, he said. □

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Stand-alone workflow withers

▸ More and more users are incorporating workflow into their development tools and apps

By Barb Cole-Gomolski

CALL IT the market that never was.

For the past five years, dozens of vendors have pitched stand-alone workflow products as a way to automate business processes and make companies more competitive.

But a new report and interviews with information systems managers point to the demise of stand-alone workflow systems as users increasingly incorporate workflow into their application development tools, groupware systems and Internet applications.

REDUCED COSTS

The benefits of making workflow part of a wider breadth of applications include reduced development, deployment and training costs, users said.

For example, HiLife, Inc., a medical management company in San Francisco, has developed several workflow applications using Keyflow from Keyfile Corp. in Nashua, N.H.

The company automated a time-card application so that contract workers such as nurses can log their hours on World Wide Web-based forms that are routed to managers for approval. Once approved, the forms are routed to accounting for payment.

Keyflow works with HiLife's Microsoft Corp. Exchange messaging system so "users are able to get their workflow items in the same place they get their E-mail," said Jack Lakes, manager of application development at HiLife.

That means reduced training costs and less resistance from end users, Lakes said. "If [users] had to open up a separate [workflow] application, I'm not sure they would use it," Lakes said.

WORKFLOW BOOM

A report released last week by Giga Information Group in Cambridge, Mass., predicted that during the next 12 to 24 months, workflow will be incorporated into development tools, middleware, frameworks and databases and will become widely used within electronic-mail and groupware systems.

That idea resonates with many users.

"Development time is reduced when you already have hooks to other systems [in the workflow package]," said David Ferguson, chief technology officer at ARM Financial Group, a holding company in Louisville, Ky.

Three years ago, ARM bought a stand-alone workflow and imaging system from ViewStar Corp. in Alameda, Calif., to develop customer service workflow applications.

Since then, ViewStar has merged with Digital Systems International, Inc. in Redmond, Wash., and the company now sells a workflow system with built-in telephony support.

As a result, ARM has rolled out a workflow application that automatically culls information about ARM's brokers and delivers it to the desktops of customer service representatives when a broker calls in.

The Giga report said the biggest reason workflow hasn't lived up to its promise is that automating work processes is extremely hard work.

"Most companies are not organized by processes, and IS does not focus on automating processes," said Connie Moore, an analyst at Giga and author of the report.

Another reason workflow has foundered is that workflow systems don't come with compelling business applications. What's more, most software developers don't see the need to use workflow as a repository for business rules, Moore said.

Delphi Consulting Group, Inc. in Boston said the market for workflow software and services grew a modest 14% last year to about $930 million. Delphi forecasts a 12% increase this year.

In addition to modest growth, Delphi's research revealed a major consolidation among workflow software makers. The top three workflow companies — FileNet Corp. in Costa Mesa, Calif., Eastman Software, Inc. in Billerica, Mass., and IBM — now control 45% of the overall workflow market.

MARKET SCRAMBLE

Some of those vendors are scrambling to reposition their products.

FileNet is returning to its document management roots. Others, such as Action Technologies, Inc. in Alameda, Calif., are focusing on Web-based collaboration.

"Some of the early workflow vendors now realize that other markets are potentially more lucrative than stand-alone workflow tools," Moore said. □

How to pick a winning workflow app:

1. When evaluating workflow products, look for vendors with other competencies, such as document management and application development.
2. Think of workflow as middleware that links event-driven processes on the front end to back-end systems.
3. For complex integration projects, involve staff who understand the business and technology issues.
4. Involve systems architects in all projects that automate business processes.

Source: "The End of Workflow as We Know It," Giga Information Group, Cambridge, Mass.

Users want it all: best-of-breed products, full ERP systems and integration between the two

By Randy Weston

USERS ARE ANSWERING the question of whether to go with an enterprise resource planning (ERP) system, such as SAP AG's R/3, or multiple best-of-breed tools with a resounding yes ... and yes.

Companies are increasingly adopting ERP systems and also are turning to best-of-breed products to fill niche needs such as advanced planning or product data management.

ENTERPRISE RESOURCE PLANNING

And they want the vendors to provide the integration between the two.

"Vendors need to understand users are looking for them to make the connectors [between application packages]," said Roger Keller, supply chain manager at General Electric Co.'s Industrial Control Systems division in Atlanta. "We are trying to keep as much functionality in our enterprise backbone as possible."

CALL OF THE MARKET

Vendors are beginning to heed the call. SAP, Oracle Corp., The Baan Co. and PeopleSoft, Inc. have launched aggressive programs to certify third-party products on their respective application packages.

Most are concentrating on alliances with the top two or three players in each market.

For example, SAP and Oracle have deals with I2 Technologies, Inc. in Irving, Texas, and Manugistics Group, Inc. in Rockville, Md., fierce rivals in the advanced planning and supply-chain management arenas.

Black & Decker, Inc.'s North American power tool division in Towson, Md., is now implementing SAP's R/3 system and Manugistics' supply-chain management software as part of a massive re-engineering effort.

COOPERATION COUNTS

Mark Dailey, vice president of the supply chain at Black & Decker, said Manugistics was chosen partly because SAP and Manugistics worked together to integrate the products.

"I don't want to have to worry about writing code," Dailey said.

He said the vendors need to get together and jointly own the integration so in case of a problem, his office can call SAP or Manugistics to get an answer and not have to deal with any finger-pointing.

"At the end, I don't care who I call, as long as the issue is being resolved," Dailey said.

Dailey belongs to a camp of users who expect their ERP vendors to give them a number of choices in each market rather than partnering with just one supplier in a niche.

ANOTHER CAMP

Oracle and SAP are doing just that. But some vendors such as Baan and PeopleSoft are either acquiring companies in a particular market or partnering with limited players in a particular market.

For example, Baan bought Berclain, a Saint-Foy, Quebec-based maker of manufacturing synchronization software. PeopleSoft bought Red Pepper Software, Inc. for the same type of tool.

More recently, Baan bought Aurum Software, Inc., a maker of customer service and sales force automation software.

Forklift maker Crown Equipment Corp. in New Bremen, Ohio, is standardizing its operations on Baan's business process software. Mark Manuel, Crown's general manager of information services, said the sales division was evaluating seven different sales force automation software packages.

But when Baan bought Aurum, the decision was easy — go with Aurum, because the vendor would do all the required integration.

BUDDY SYSTEM

The leading ERP vendors have partners for product data management

SAP	10 partners worldwide
Oracle	31 partners worldwide
Baan	Bought Bain Co.

Manuel falls into the other camp. He said he doesn't have a problem being limited to the vendors Baan chooses.

"In the seven choices, the functional differences were negligible," he said. "If Baan can save money choosing one, and we save money on integration costs, it's a win-win situation." □

Oracle Express
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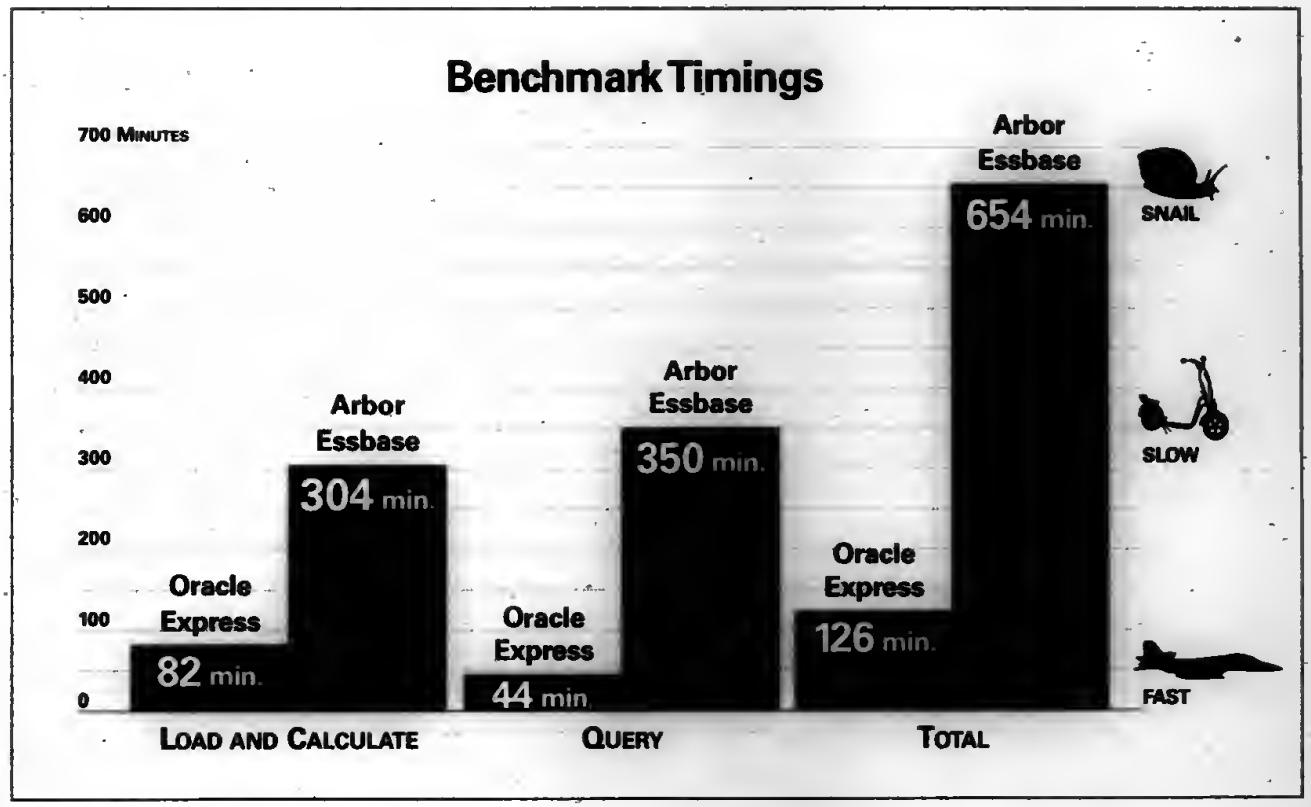

Oracle® Express® Server performed the Industry Standard OLAP Council APB-1 benchmark over 5 times faster than Arbor Essbase on identical hardware*. Oracle Express Server slaughtered Arbor Essbase in both load and calculation times and query times. In addition, Express required less than one third the disk space of Arbor's Essbase. So, if you're in a hurry for more answers, call Oracle today at 1-800-633-1071, ext. 12323 or download a summary of the results from our Website at http://www.oracle.com/olap/ Or, if you've got time on your hands, call Arbor.

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FRANKLY SPEAKING

How to get the real dirt

FRANK HAYES

WHAT IS THE MOST thankless job in your IS shop?

The one that comes with the least respect and the biggest pile of grief. The one everybody dreads and nobody loves.

That's right — it's dealing directly with users.

The support people who unjam the printers, install the new video drivers and fiddle with network connections until they start working again don't get a lot of respect.

Sure, they're your front line of defense against users' screams. Yeah, they're the real face of information systems to most people in your organization.

So what? If those grunts were any good, if they *deserved* any respect, they'd haul themselves out of help desk hell and become programmers or database analysts or systems operators or *anything* else that doesn't require dealing with real live users — right?

Funny, isn't it? For the past few years, we've all been singing the praises of user-focused IS. We've talked about listening to users, meeting user needs, getting closer to users. Consultants, columnists and CIOs all chant the mantras of "aligning IS with business needs" and "delivering value to users."

Yeah, right. And how exactly do we go about aligning and delivering?

Help desk and support staff are the real face of information systems.

We calculate stratospherically high return on investment for our favorite new technologies. We hire consultants to tell us the latest wisdom about what users need. We upsize, downsize, rightsize and capsize according to whatever hot winds are blowing through the executive suite.

The one thing we *don't* do is listen to frontline workers — either the ordinary users who actually have to use the systems we build or our own IS grunts who support them. Why not? Maybe we're afraid they actually know how information technology affects the business.

They don't know it from fictitious return-on-investment analyses or make-believe consultants' reports or whatever is politically correct this week on the 40th floor. Users know it because they use our systems every day to do real business. They know what works, what's worth the trouble and what just wastes their time.

And support people know it because they have to take abuse from those users every day. They know what's expensive to maintain and what chugs along fine. And they know which problems users will scream about and which issues don't matter.

In other words, they've got the information you need to align IS with business, deliver value and just plain stop wasting time and resources on pointless projects and unnecessary efforts.

How can you tap that information? It won't come to you on its own. Everyone knows it is career suicide to deliver unpopular, unrequested, against-the-grain information to the boss — especially for the support people who would really like to not spend the rest of their lives at the bottom of the IS org chart.

So you'll have to get serious about pumping information out of your support people. Try these ideas on for size:

- Establish a $25 bounty for new or unusual user gripes.
- Check help desk logs each week to find which three hardware and software items give users the most trouble.
- Send support staff scouting for the five top program features users really use — and don't use.
- In a closed meeting, ask support people who your 10 most cranky, most difficult, most support-intensive users are.

That's real information about *your* users, information you can use to improve systems and allocate IS resources.

The information won't come easily. Help desk and support people don't view themselves as experts on what goes right and wrong for users. And they won't thank you for the extra work.

But they *are* the people who know. □

Hayes is Computerworld's staff columnist. His Internet address is frank_hayes@cw.com.

SHORTS

IT key to bank acquisition

Justifying the company's pricey acquisition of CoreStates Financial Corp., executives at First Union Corp. last week cited computer system upgrades and year 2000 bug fixes as reasons for the deal. First Union, in Charlotte, N.C., announced it would buy Philadelphia-based CoreStates for $16.3 billion, or five times the bank's book value. Officials said it would have cost CoreStates $60 million to make its systems year 2000 compliant, while First Union is expected to handle the job for less than $10 million.

Sun to Microsoft: No Java logo

Sun Microsystems, Inc. last week asked a federal court to block Microsoft Corp. from using the Java logo on its World Wide Web browser in the latest maneuver in the companies' legal battle. Sun asked the court to move up a scheduled February hearing so it could seek the injunction against Internet Explorer 4.0. Sun and Microsoft have sued each other over Java licensing.

HP earnings rise 24%

Hewlett-Packard Co. last week announced earnings of $806 million — or 75 cents per share — on revenue of $11.8 billion for its fiscal fourth quarter. That reflected a 24% increase in profit from the same period last year. Revenue in HP's computer business, driven by PC sales and high-end Unix servers, rose 16% over last year's fourth quarter to reach $9.7 billion.

Digital networking on the block?

Rumors continued to swirl around the industry last week that Cabletron Systems, Inc. was prepping an alliance with or purchase of Digital Equipment Corp.'s Network Products Division. Officials at Rochester, N.H.-based Cabletron would neither confirm nor deny the rumors. Digital officials said they would "continue to explore a variety of possible relationships with other companies."

JavaStation release delayed

Input from pilot users has forced Sun to revamp its network computer, postponing its release from fall to the first quarter next year. Users told Sun they want the JavaStation to be more than a green-screen replacement. The JavaStation, which costs about $700, will be in an increasingly competitive market. IBM has three network computers on the market; Oracle Corp. has one; and Microsoft is coming out with a thin client positioned as a competitor to the network computer.

Deadbeat-tracking system killed

California last week terminated its contract with Lockheed-Martin IMS in Teaneck, N.J., to develop the State Automated Child Support System, a system intended to provide seamless tracking of deadbeat parents in the state's 58 counties. After that state spent nearly $100 million, the original project estimate, the system was working in only 17 counties. Some users complained about lost data, slow performance and difficulties operating the tracking system.

Calif. auto group farms out IT

The California State Automobile Association (CSAA) last week said it has outsourced almost its entire information technology operation to MCI Systemhouse in a deal worth an estimated $500 million over 10 years. CSAA officials said the move will free up a core set of information systems staffers at the agency for strategic IT projects and long-range planning, and it will give MCI responsibility for daily IS operations and support functions.

KPMG wins $186M NASA pact

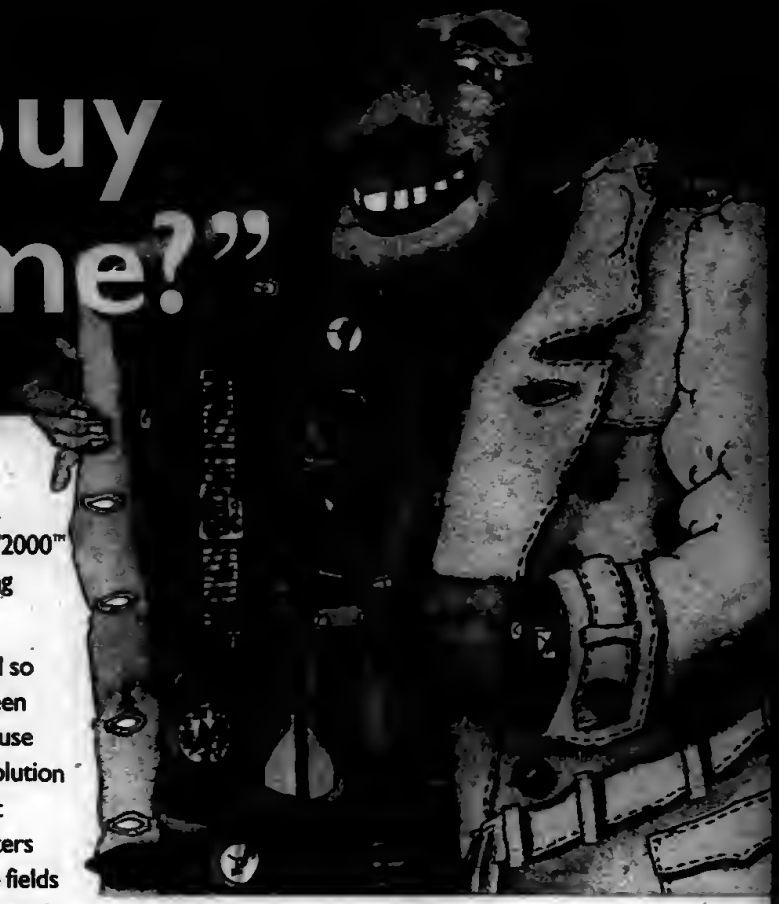
NASA last week tapped KPMG Peat Marwick LLP to develop and maintain a $186 million financial management system for 15 years. The system will replace older systems that differed from one another at the National Aeronautics and Space Administration's headquarters and 10 centers. The system will create uniform applications for all 18,000 NASA users.

Credit-card firms support SET

The Big Three credit-card companies have agreed to create an organization to help implement the Secure Electronic Transaction (SET) protocol for business conducted over the Internet. The entity will manage SET specifications and oversee software compliance testing. American Express Co., MasterCard International, Inc. and Visa International, Inc. are backing the venture along with JCB Company Ltd. of Tokyo.

SHORT TAKES Trying to kick a rival when it's down, **Oracle** last week began trying to lure **Informix Software, Inc.** users to defect by offering them discounts of up to 35% on its Oracle7 and Oracle8 databases. ... Two online advertising firms, **ClickOver, Inc.** and **Focalink Communications, Inc.**, both in Palo Alto, Calif., said they will merge to serve more than 200 Web advertising customers. ... **Symantec Corp.** in Cupertino, Calif., last week launched a Web site with virus updates for IS professionals at *www.symantec.com/navcorp*. ... **Microsoft** said Office 97 sales have topped 20 million units and have surpassed sales figures for all previous iterations of the suite.

"Psst . . . Wanna Buy Some Time?"



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Large systems user groups link shows to offer users more

By Tim Ouellette

WITH INFORMATION systems departments short-staffed and facing limited time and budgets for trade shows, some user groups are offering a two-for-one deal.

Several traditional large systems user groups — including Guide International Corp., Share, Inc. and AFCOM — are planning joint or coordinated conferences to give users more education, networking and product updates.

Although joint conferences are common for IBM user groups outside the U.S., groups such as Guide and Share haven't held a joint meeting since the 1960s, group leaders said. Like most user groups in the industry, Guide and Share have tried to maintain and attract new membership by spicing up their conference offerings.

In their most extensive effort, Guide and Share, both based in Chicago, will hold a joint conference in Washington in August. The conference will offer an integrated program that builds on the strengths of each group. For example, Guide has always been strong in information technology management issues, while Share comes from a more technical pedigree.

That means they will offer more sessions based on each group's strengths, sometimes dropping certain sessions and letting the other group take the lead in coordinating that presentation.

Guide also will hold its spring conference at the same time and in the same conference center in Las Vegas as AFCOM, another data center-oriented user group based in Orange, Calif. But they won't share conference sessions. Users will pay to attend their own show but will also be able to mingle with members from the other user group.

Joint conferences are just one of the things large systems user groups are doing to keep and attract members – "it won't be the last."

– Ron Higgin, Guide International

Many companies have employees who are members of more than one of the three groups, so the joint efforts also could simplify travel arrangements and scheduling conflicts.

The moves are part of a trend to shake up the groups' offerings, which began in the past few years by embracing a wider technology scope. That has paid dividends in growing membership and conference attendance [CW, May 5].

User group officials stressed that the organizations aren't merging.

Guide, Share and AFCOM each claim memberships of 1,000, 2,200 and 2,600, respectively. The numbers have risen after a period of decline in the early 1990s.

The joint Guide/Share conference also will provide a forum to update each other's members on special user-driven programs, such as Guide's software licensing standards effort.

And because Guide and Share are both IBM-sponsored user groups, they will have a consolidated and more impressive voice when presenting users' top concerns to IBM.

"This is part of a continuing set of things we are doing to try different types of arrangements that will help our members," said Ron Higgin, president of Guide. "Expect more from us, because for Guide, it won't be the last." □

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Schmidt: Novell will lead, but recovery 'will take some years'

At Comdex/Fall '97, Novell, Inc. CEO Eric Schmidt met with Computerworld Senior Editor Laura DiDio, Executive Editor Maryfran Johnson and Technical Sections Editor Kevin Fogarty to discuss his turnaround strategy. Schmidt pulled no punches about Novell's past marketing and management missteps and was upbeat about upcoming products and improving relations with customers.

CW: When do you expect to see results of your freshman year?

SCHMIDT: There's a tendency to want immediate answers when companies struggle. It took some years for Novell to get into its current state, and it will take some years for Novell to [recover]. We will be a leader in Internet and intranet computing roughly one year after I started [in April 1996], which coincides with the shipment of Moab (NetWare 5.0) and directory-enabled services.

CW: The perception lingers that it's going to be tough to regain Novell's dominant position in networking.

SCHMIDT: Microsoft tends to drive a lot of mind share, everyone knows that. There has to be a reason to believe. The products have to be shipping, marketing has to tie to those messages and then it has to be true.

CW: Customers still feel they're being forced to go to Windows NT because that's the way the world is going.

SCHMIDT: Let me paraphrase the question as "Microsoft is going to take over the world, and what do you think about that?" I don't believe that for a number of reasons. I don't believe it's supported by Microsoft's technology; I don't think it's in the best interest of customers; and I don't think it leads to a best-of-breed technology. I can't think of any other market where we would just buy from a vendor without evaluating choices.

CW: How much actual attrition have you seen in the loss of NetWare 3.x and 4.x users who went to Windows NT instead?

SCHMIDT: The number we've been shown internally has been 3% a year. The pie is getting bigger. In aggregate, the number of products we're selling and the number of customers we're getting is increasing. The market share is declining slowly.

CW: Is Novell changing how it deals with enterprise customers?

SCHMIDT: Novell developed a market group two years ago. And when I discovered them here, I was delighted because it reminded me of Sun [Microsystems, Inc.]. These are people who own accounts, talk to the CIOs and make the customers happy. And we are expanding that program — [it's] doubling this year and there may be a proposal to triple it. The trick is, you don't want to cut the channel out because the channel is important in the value chain. The people who work for us in the channel are evangelizers. This is technically a hybrid model, not a direct vs. indirect model. It's not as unusual as you might think. Most of Microsoft's corporate accounts are handled this way.

Novell CEO Eric Schmidt: "The number of customers we're getting is increasing. The market share is declining slowly"

CW: You mentioned in your Comdex keynote speech that one of your long-term strategies is the delivery of network-centric applications. Can you give us more details?

SCHMIDT: I would rather not pre-announce products. But there is a set of applications that we are going to build ourselves in the area of security. And then there is a much larger set of network-centric applications that will be built by third parties.

CW: What are you doing to ensure that the efforts of Novonyx, the Novell/Netscape Communications Corp. start-up company, don't cannibalize Novell's own Internet and World Wide Web initiatives?

SCHMIDT: I tend to think of Novonyx as Novell's Internet and Web initiatives. We're pushing very hard on Novonyx. We think they'll be fully functional and directory enabled.

CW: What's your take on the Java and browser wars between Sun and Microsoft Corp.?

SCHMIDT: I think it's incredibly important that a set of base APIs for Java be vendor- and platform-independent.

We at Novell have committed to 100% Pure Java, and we're building a lot on top of that. I think the current legal dispute is not good because it has the possibility of splintering the developer community, and it's important that we remain united around this common set of interfaces. □

For 1998, Novell primes the new-product pump

By Elinor Mills
LAS VEGAS

IN ADDITION to moving its network management software to more platforms, Novell, Inc. plans to break some technologies out of existing products to create products, bundle others and offer a new product in January — possibly geared toward network computers.

John Slitz, senior vice president of Novell marketing, said Novell Directory Services (NDS) for Windows NT running on the server can manage any networked device in a network computer environment.

Novell will introduce a product at the end of January "that will tie these capabilities together," Slitz said, although he declined to elaborate.

But Slitz described the product as a "cool shock absorber between the directory and NetWare, or IPWare," as he referred to the next iteration of the operating system, code-named Moab.

Moab will let network administrators run systems across NetWare's IPX protocol and IP. The next beta of Moab will begin testing sometime between Dec. 15 and Jan. 15, Slitz said. The final version will be released six months after that, he said.

Next year, Novell will be "working on ways our products — Border Manager, [NDS], Application Launcher — can be tied together as a package," Slitz said. "We've been focusing on pieces and not on the whole."

Novell also is looking at breaking up some of its technologies, either to create separate individual products or to add them to other products, Slitz said. He declined to provide details.

"We want to expose things that have value in a package" and allow users to buy them individually, Slitz said. For example, the NDS tool Application Launcher could become a separate product or part of another product, he said.

Novell's latest offering, NDS for NT, will be available this month. Slitz didn't say which operating system would be next for NDS. But he mentioned Sun Microsystems, Inc.'s Solaris and Hewlett-Packard Co.'s HP-UX.

JAVA DEVELOPMENTS

As for Java, a version of the ManageWise network management product to be released next year will be Java-based, as Border Manager is now, Slitz said.

Novell also is working on a Java-based console, code-named Houston, that will replace NetWare Administrator but will allow NetWare Administrator and ManageWise to snap into it, said Samm Distasio, product marketing manager at Novell.

Novell will release the Software Development Kit for Houston at the beginning of next year and plans to offer an NDS snap-in sometime in the middle of the year and one for ManageWise later in the year. □

Mills is a writer at the IDG News Service in San Francisco.

Microsoft, DOJ trade tit for tat

By Carol Sliwa

The U.S. Department of Justice last week unearthed an internal Microsoft Corp. document to bolster its complaint that the Redmond, Wash., software giant is unlawfully using its Windows monopoly to push its Internet browsing software, in violation of a 1995 consent decree.

Microsoft claims that Internet Explorer is an integrated feature of Windows 95 and that the government was well aware of the company's plans when the consent decree was signed.

The two products have been integrated since the release of Windows 95, Microsoft officials said.

But to show that company officials didn't consider the products integrated as late as last year, the Justice Department pointed to the following Dec. 20, 1996 electronic-mail message from Microsoft's senior vice president Jim Allchin to group vice president Paul Mantz:

"I don't understand how [Internet Explorer] is going to win. The current path is simply to copy everything that Netscape [Communications Corp.] does packaging and productwise. ... My conclusion is that we must leverage Windows more. Treating [Explorer] as just an add-on to Windows which is cross-platform [is] losing our biggest advantage — Windows market share."

Allchin said Microsoft should think "first about an integrated solution. That is our strength."

The Justice Department claims Microsoft is leveraging its Windows market share to "increase distribution of Internet Explorer and thus to 'win' the browser war."

Microsoft has said it was merely improving its Windows operating system, adding a feature that customers wanted.

A federal judge will decide next month how the case will proceed. □

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Informix begins to show signs of life

▶ *But users are skittish following dismal Q3*

By Craig Stedman

AFTER SEVEN MONTHS of cost-cutting and confessing to bookkeeping sins, Informix Software, Inc. is trying to go back on the offensive with a narrowed marketing focus and revamped database packaging.

But dismal third-quarter results announced last week highlight just how far Informix has to go to find the comeback trail.

Robert Finocchio, who took over as Informix's CEO in July, said he plans to target high-performance applications and de-emphasize more "run-of-the-mill transactions where anybody's database will do."

Finocchio also said Informix is done cutting costs and doesn't intend to kill off any products.

Meanwhile, the hard-pressed vendor made good on promises to announce a repackaging that reduces pricing on some of its software (CW, Oct. 13).

DATABASE REPORT CARD

Vendor	Technology	Market position
Informix	A-	D+
IBM	A-	B-
Microsoft	B+	B
Oracle	B-	A-
Sybase	B-	C-

Source: Forrester Research, Inc., Cambridge, Mass.

NEW BUYERS WARY

Users who rely on Informix were heartened that the Menlo Park, Calif., company finally is showing signs of moving forward again. But they said Informix still has to persuade new buyers to bet the farm on its technology — something its $111 million third-quarter loss won't help.

"I wasn't happy with what I saw about the third quarter," said Janice Richardson, manager of systems and operations for the city of Aurora, Colo. A loss was always in the cards, "but I was hoping it wouldn't be so stark," she said. "Their revenues took a pretty severe hit."

Richardson and Maribeth Anderson, manager of technology at First Chicago Mercantile Services LLC in Chicago, said Informix's new unified database packaging should make upgrading to its parallel and object/relational technologies easier and less expensive for customers.

"But they have a really tough [marketing] job ahead of them," Anderson said. "People are still going to be looking sideways at them."

Finocchio wouldn't predict how long it will take for the company to turn itself around. He also didn't rule out the possibility of trying to find a buyer.

Third-quarter revenue totaled $150 million, about $35 million below Informix's current spending rate. Informix also restated its financial results back through 1994.

There are some silver linings: Informix closed on a new $75 million credit line and raised $110 million from land and stock sales. But it also confirmed that its bookkeeping practices are being investigated by the Securities and Exchange Commission.

John Valente, senior vice president of the information applications division at Visa International, Inc. in San Francisco, said Informix may have to find a savior "if they don't show a positive upward trend" in the next six months. But he added that he still is banking on Informix bouncing back from its woes. □

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CONTINUED FROM PAGE 1

is still "a long way from mass [market]." Web-based business is exploding, said Judy Neuman, vice president of interactive media at Eddie Bauer, Inc. Last fall, buyers tended to place an order for one item "to see if it worked," she said. Now, those dabblers seem willing to do much more buying online, and it is now common to see orders for 12 items at a time, she said.

Sales are up more than 1,000% from 1996 levels at the Redmond, Wash., company's Web site (*www.eddiebauer.com*). "We have seen huge increases since September of this year," Neuman said.

Garden Escape is projecting "at least 1,000% growth in sales from last November and December," said Cliff Sharples, president and CEO of the online garden supply center (*www.garden.com*).

Disney.com is "running five times the revenue we were running last year," said site spokeswoman Rebecca Buxton. The site (*www.shop.disney.com*) pulls in about the same revenue as three brick-and-mortar Disney stores, at substantially less cost.

The rise in sales hasn't escaped the analyst community. Forrester Research, Inc. in Cambridge, Mass., predicts that U.S.-based Web sites will post $750 million in sales this quarter, almost double last year's level. "I would not be surprised to see it hit the $1 billion mark," said Forrester analyst Kate Delhagen.

Jupiter Communications, Inc., meanwhile, forecasts $1.1 billion in Web sales for November and December alone, up from about $300 million last year. Overall holiday purchases, including store and catalog sales, totaled almost $455 billion last year, according to the National Retail Federation.

Despite the jump in interest, online purchases will still be a drop in the bucket compared with overall sales. Nevertheless,

Garden Escape's Cliff Sharples projects "1,000% growth in sales from last November and December"

"this is a very critical corner for the industry to turn," Delhagen said. "A lot of people's [Web site] business cases are riding on this quarter's numbers."

Some online sales will come at the expense of catalog and store revenues, but retailers should find that other money is from new business, including international buyers, Delhagen said.

To take advantage of growing consumer interest in Web buying, experts warned, sites must be prepared.

A flood of holiday shoppers could swamp some Web sites unprepared for traffic spikes, experts warned, particularly newer sites that haven't yet experienced a seasonal surge. "I'm sure there will be some black eyes," Delhagen said.

Response times at the average retail site could quadruple during peak shopping times, Guptill said. "I think at least half of the Web retailers [could be] used beyond capacity within the next 30 days," he said.

"Our traffic has accelerated more than we anticipated," said Ron Frey, Internet business manager at Lands' End Direct Merchants in Dodgeville, Wis. The company moved up plans to upgrade its servers, beefing up capacity in August for the holiday season. So far there have been no problems handling traffic, Frey said.

Bad weather also could create problems for these virtual stores. For example, if a blizzard hit a large part of the U.S. early next month, hordes of shoppers could flock online. On the other hand, a high-profile case of credit-card hacking on the Internet could dampen consumer enthusiasm for Web shopping.

It isn't too late to increase server capacity and bandwidth, whether in-house or negotiated with an outside host, analysts said.

It will be several years at least before Web-based sales make up a sizable portion of overall holiday spending, analysts said. But those in the business are pleased with current trends.

"There's going to be more business than last year," Frey said. "We were happy last year. We're going to be more happy this year." □

Borland looks for profit in cross-platform acquisition

By Sharon Gaudin

BORLAND INTERNATIONAL, INC. is giving its users some platform independence with last week's purchase of a multiplatform middleware vendor.

Borland, an application development tool vendor on the mend after several years of red ink, bought San Mateo, Calif.-based Visigenic Software, Inc. for about $150 million.

The deal will add Visigenic's popular object request brokers (ORB) — based on the Common Object Request Broker Architecture (CORBA) — to Borland's historically Windows-based development tools. That will make it easier for Borland users to develop applications for non-Windows platforms.

"It's Borland's way of telling their users they are serious about the enterprise. Windows isn't the only platform out there, and they know that now," said Mike Riley, a programmer at R. R. Donnelley & Sons Co., a printer in Chicago. "It's going to be interesting to see how they can take their Windows-centric tools cross-platform."

ORBs enable client-side applications to call up and deliver data from disparate back-end servers. An ORB is an electronic bus that transports the information between applications that otherwise would have a difficult time communicating.

Integrating the CORBA ORB into Borland's tools, which have been based on a 32-bit Windows environment, opens up the tools to other platforms because CORBA is platform-independent.

Rick LeFaivre, vice president of research and development at Borland, said Visigenic's ORB, called VisiBroker, already is bundled into the latest version of Borland's Java development tool, JBuilder. He also said VisiBroker will be worked into Borland's C++Builder and Delphi.

"Users are always looking for a way to get the advantages of middleware without ever having to program it. And through integration with Borland's tools, those connections should automatically fire up," said Karen Boucher, director of The Standish Group International, Inc.

Doug Wielard, a senior systems engineer at NationsBank Corp. in Chicago, said he is eager to see JBuilder and VisiBroker even more integrated.

"We have people that are using it, and they like it together," Wielard said. "The fact that the two products are coming from the same company hopefully will mean they'll be able to move faster in supplying us with tools for the front end that tie in better with our back ends." □

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Thin-client users to get server ware

By Wylie Wong

MICROSOFT CORP. and Citrix Systems, Inc. last week released beta versions of server software designed to let terminal and non-Windows computer users run Windows applications in a thin-client environment.

The products will help "address a significant problem Microsoft has had dealing with the [thin-client] audience," said analyst Rob Enderle at Giga Information Group, Inc.

Microsoft's software, code-named Hydra, lets terminal users run Windows applications on a Windows NT 4.0 server. A Hydra add-on — Citrix's Picasso server software — provides support for a variety of hardware and software, including 16-bit Windows, Unix, Macintosh and Java Virtual Machine.

Microsoft officials said Hydra runs NT 4.0, while Citrix's earlier Winframe product runs only NT 3.51. Citrix said Picasso offers audio/video capabilities; seamless access to disk drives, printers and other peripherals; and management tools that route users in a multiple-server system to the server that is the least busy. Both products should ship in the first half of next year. Prices haven't been announced.

PLANS TO SWITCH

David Alarie, a technical director at Amcore Financial, Inc. in Rockford, Ill., said he has 1,500 PC users who need to run 16- and 32-bit Windows applications on NT and have the freedom to run Java applications. He will get that from Picasso.

Alarie said he was initially skeptical about Microsoft's latest thin-client offering because he had concerns about having a "bastardized version of Java." But after looking at Hydra and Picasso, Alarie said he plans to lobby his bosses to switch to the software sometime next year.

Doug Wiggin, IS director at Cooperative Computing, Inc. in Austin, Texas, said he may switch to thin clients someday. But after viewing the choices, he said it is too soon to consider moving his 10,000 users from Unix to Microsoft-sanctioned Windows-based terminals. □

Are users ready to hang PCs out to dry?

▸ *Seductive NCs hover; Microsoft and Compaq preach abstinence*

By Gordon Mah Ung
LAS VEGAS

LOVE WAS in the air last week at Comdex/Fall '97.

Thin-client nemesis Microsoft Corp. CEO Bill Gates started things rolling when he ticked off the top 10 reasons he still loves his PC during his keynote here. At the Microsoft Pavilion, Gates' employees handed out "I 'heart' my PC" T-shirts to attendees.

The message was repeated again by fellow speaker and Compaq Corp. CEO Eckhard Pfeiffer, who also told people to "keep loving your PC."

But it wasn't love the CEOs were talking about it. It was a message of monogamy: Practice faithful devotion to the PC while ignoring the calls of the up-and-coming network computers.

Many show-goers said they had no intention of ending their long love affair with the PC any time soon, but several acknowledged that there was more room in their hearts, and more important, in their offices, for the network computer and its promise of lower cost of ownership through centralized administration.

Users stressed that although power users would never give up PCs, transactional workers and their businesses could benefit from the simplified applications said to be part and parcel of network computers.

MIXED MESSAGE

Others expressed frustration with the mixed message coming from the computer industry that first pushed everyone away from host-based to client/server processing and is now redirecting users back to host-based computing. Many also continued to voice concerns about network computer performance issues and the cost of maintaining the high-speed servers they require.

"I love my PC, but it's not for everybody," said Hazel Ibanez, a training consultant in Corpus Christi, Texas. "It's just too much. [End users] are overwhelmed."

She said she believes network-centric computing will become a reality but added that none of the network computers displayed here impressed her with speed or pricing.

Like most, Tony Beckett can recall the first days of the IBM PC. While he said he thinks of those days wistfully and all that has come of the PC, he admitted that the time may have come for something easier to manage in a multiuser setting.

"Personally, I still love my PC, but I see the need for [network computers]," said Beckett, a project manager at systems integrator Computers Plus, Inc. in Jefferson City, Mo. He said network computers could have been used to simplify a state project that required upgrading 500 PCs in different locations within 24 hours.

William Ball, a systems administrator at the Corpus Christi Independent School District in Texas, said he doesn't like the time spent upgrading clients but isn't sure users would want the slimmed-down functionality of a Java-based office suite such as ESuite from Lotus Development Corp. "You can't take something away from people once they've had it," Ball said.

Stan Reighgott, vice president of technology at InfoGraphix, Inc. in Boston, dismissed the slogan as nothing more than marketing hype that trivializes what information systems staffs are trying to do.

"I don't think it's a matter of love. It's pragmatism," Reighgott said. He advised IS to ignore the political debates and work toward providing the best software and equipment to end users that makes the most business sense.

"Love it or hate it, Microsoft still owns the show," Reighgott said. If network computers make better business sense in the future, nothing involving love would keep them from switching, he added. □

Microsoft employees handed out hats and T-shirts to Comdex attendees

Vendors add laptops to their build-to-order list

By Terho Uimonen and Kim Girard
LAS VEGAS

LEADING PC vendors, including Compaq and IBM, have extended their build-to-order strategy to the notebook segment, giving distributors the capability to offer buyers a wider range of configuration options.

For vendors, the focus now is on implementing their build-to-order and configure-to-order plans in order to improve time-to-market and lessen the risk of being stuck with excess inventory, said Randal Giusto, director of mobile technologies at International Data Corp.

In addition, some of the cost savings gained from the manufacturing efficiencies may benefit buyers in the form of lower prices and faster access to the latest technologies, said officials here at Comdex/Fall '97.

Compaq Computer Corp. this week announced that additions to its high-end Armada 7300 and 7700 lines will be built to actual channel orders as they become available later this year.

And IBM last week gave the nod to its resellers to build notebook PCs. IBM will kick off the program with its ThinkPad 770, which has components — including memory, battery and CD-ROM — designed to slide into the machine, rather than be anchored down with screws.

Putting components into the hands of resellers could reduce from several weeks to several days the time it takes to get a laptop. And IBM said the new strategy should lead to price cuts, as it has with its desktop model, the PC 300GL, which now sells for $999. □

— Uimonen writes for the IDG News Service.

Notebook customers may see lower prices and faster access through the retail channel

Uncle Sam wants you to be year 2000 compliant ... now

CONTINUED FROM PAGE 1

Experts characterized the action as a wake-up call to year 2000 Rip van Winkles and said they expect other federal and state regulatory agencies to soon begin auditing and monitoring companies in other industries, such as utilities, telecommunications and health care.

START OF THE WAVE

The Federal Reserve's move "is the first in a huge wave of similar actions to follow" in other regulated industries, said Stephanie Moore, an analyst at Giga Information Group in Westport, Conn.

Hugh Thompson, the Nuclear Regulatory Commission's (NRC) deputy director for regulatory programs, last month said the agency is considering whether a special NRC inspection team might be needed to chart the year 2000 progress of federally chartered nuclear power plants.

The Federal Reserve could shut down the Georgia banks it cited last week, but banking observers called that extremely unlikely. Most experts said the government singled out the company to show how serious it is about monitoring year 2000 compliance. The banks have until the middle of next month to file updated compliance plans.

> Experts say the Fed's cease and desist order should serve as a heads-up to other small to midsize banks that have fallen behind or haven't started year 2000 remediation work

Joe P. Hudson, executive vice president at Putnam-Green's Farmers and Merchants Bank, declined to comment.

A spokesman for the Federal Reserve in Washington wouldn't say whether the agency plans to take action against other banks that may have missed the Sept. 30 deadline.

The U.S. Office of the Comptroller of the Currency so far has examined 500 banks and vendors for their year 2000 preparedness, an agency spokesman said. Another 2,800 banks and vendors will be examined by the middle of next year, he said.

Although the spokesman said he was unaware of any plans by the agency to take enforcement actions against noncompliant banks, "we have not ruled out doing that if we have to," he said.

Some information systems executives fear that excessive state and federal regulations could place more strain on resource-starved IS shops that are already struggling to meet their millennium deadlines.

"No one has the time or resources to answer questions from 15 different federal agencies," said Jim Jones, managing director of the Information Management Forum, an Atlanta-based IS executive user group. "That would be counterproductive."

Nevertheless, regulatory and legislative proposals continue to surface.

Earlier this month, U.S. Sen. Robert Bennett (R-Utah), chairman of the Senate financial services and technology subcommittee, introduced a bill that would force publicly owned companies to disclose to shareholders how much money they are spending on the year 2000 problem and reveal their liability exposure and backup plans. □

Staff writer Matt Hamblen contributed to this report.

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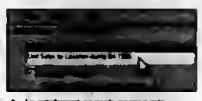

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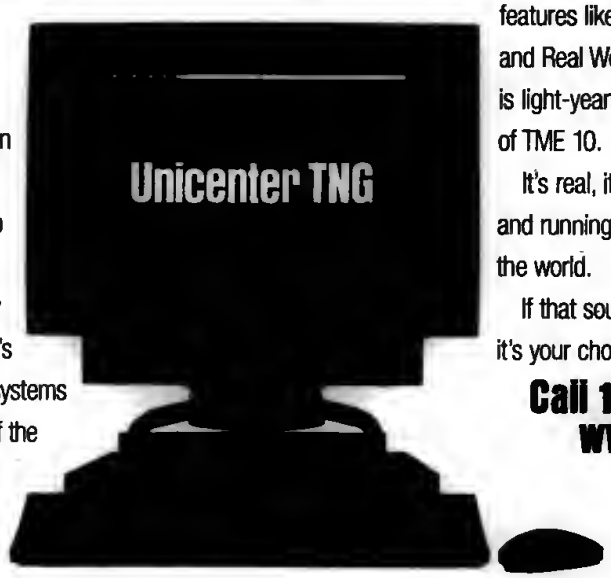

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Netscape tools designed for building 'net apps

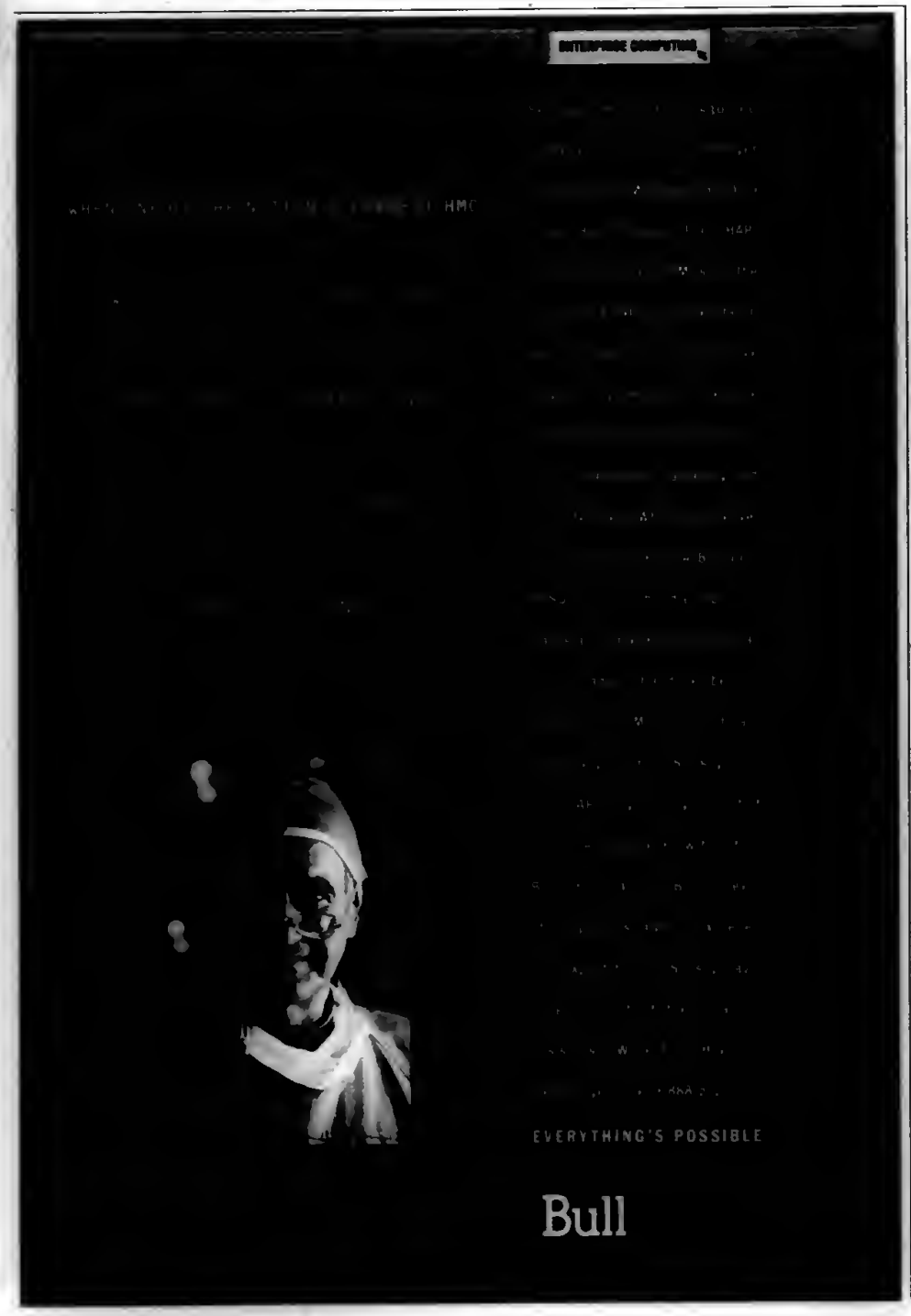
By Carol Sliwa

NETSCAPE COMMUNICATIONS CORP. last week announced its SuiteTools 2.0 product family for building intranet and extranet applications.

The suite, scheduled to ship next month, includes the company's long-awaited Visual JavaScript tool and a new Component Builder.

The tools aim to help developers build standards-based applications, dubbed "crossware" because they run across networks, operating systems and platforms.

Crossware applications can leverage a wide range of server-side services, such as messaging, publishing and database connectivity, that are exposed as JavaBeans components. JavaBeans are prebuilt blocks of software code that can be linked together to build applications.



Because the Mountain View, Calif., software maker hadn't offered tools of its own until Visual JavaScript went into beta testing in April, Netscape customers were forced to use a suite of tools from third-party vendors.

"This is a great opportunity for Netscape," said Tim Sloane, an industry analyst at Aberdeen Group, Inc. in Boston. "Nobody else has the online presence they have."

Netscape, with help from its partners, could produce add-ons and new components, making them easily and quickly accessible to developers via its World Wide Web site rather than the standard packaged distribution mechanisms, Sloane said.

SuiteTools 2.0 aims to help developers build standards-based applications and "is a great opportunity for Netscape. . . . Nobody else has the online presence they have."
– Tim Sloane, Aberdeen Group

Visual JavaScript lets developers create applications without writing excessive amounts of code. Programmers merely drag and drop JavaBeans onto Web pages, wire them together with JavaScript and deploy them by publishing the pages to a Web server.

FEATURE-PACKED

Key features in the visual-oriented tool include a palette with more than 40 JavaBeans from Netscape and third parties and an "inspector" that lets developers see a component's properties and events.

Component Builder 1.0 lets developers build their own custom Java and JavaScript components as well as components targeted for use with the Common Object Request Broker Architecture. The product also includes Symantec Corp.'s Visual Cafe 2.0 Professional Developer Edition for building JavaBean components and Acadia Software, Inc.'s JavaScriptBean Builder for creating JavaScript components.

SuiteTools 2.0, with Visual JavaScript Pro 1.0 and Component Builder 1.0, costs $995 per developer seat.

The Visual JavaScript Pro edition, which costs $795 without the Component Builder, includes the Visual JavaScript 1.0 tool, a developer license for Netscape Enterprise Server 3.0, a personal SQL database, a JavaScript debugger, JavaBeans and training materials.

The Visual JavaScript tool and JavaBeans are available as a separate product for $495. Component Builder costs $295 as a stand-alone product. □

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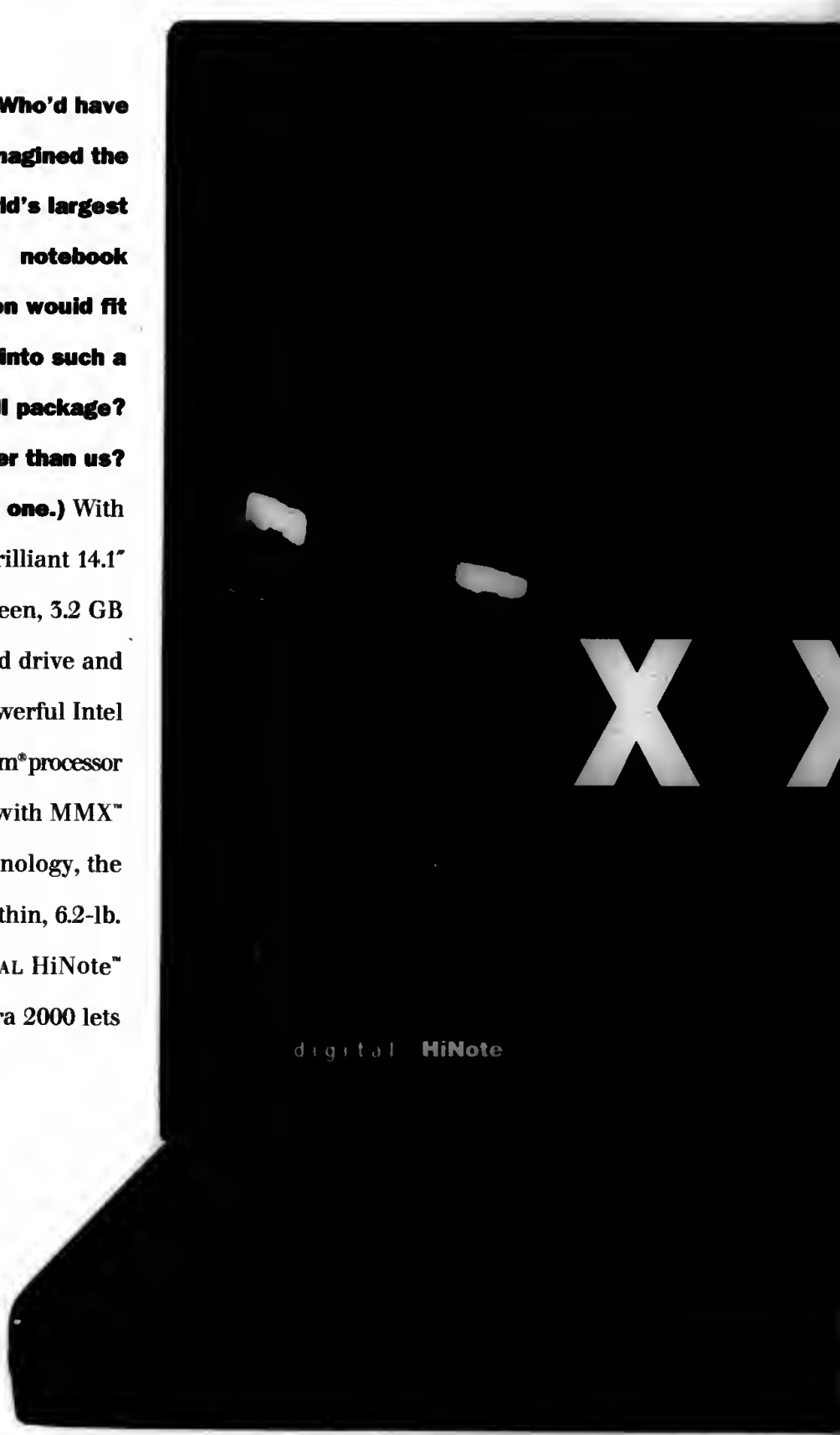

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Applix software targets customer service

By Gordon Mah Ung

BETA TESTERS OF Applix, Inc.'s new customer interaction software said they are impressed with the speed of the new version and its ease of administration.

Enterprise 7.0, which shipped last week, uses a common database to link sales, customer service, quality control and help desk functions. "The business value is simply that everything is tied together," said Lee Steinbeiser, a systems analyst at New Holland, Inc. in New Holland, Pa.

The Enterprise software was designed to let companies share important customer information among departments as they grow. By making all the information available to all clients from a central database, Applix believes it can help companies build a loyal customer base.

The new version was designed to improve performance by using a 32-bit client and by shifting much of the processing that had been done on the client to the server. The sales and marketing modules also are new.

New Holland, a manufacturer of tractors and farm equipment, uses Enterprise 6.01 to support about 1,500 dealers in the U.S. and Canada. Steinbeiser said three support groups now use Enterprise 6.01 to handle customer inquiries. The sales department isn't using the module, but once that group is up and running with the software, Steinbeiser said he expects to see some benefits from the integration.

All customer information will be available to clients on a central database

"If one manager wants to see what problems a dealer is having, he can call up all the problems," Steinbeiser said. "It's definitely an improvement over their current technology."

Applix is positioning the new version as a lower-cost alternative to customer service software from companies such as Vantive Corp. and Aurum Software, Inc. both in Santa Clara, Calif.

Enterprise 7.0 runs on Unix and Windows NT Server with client support for 32-bit and 16-bit versions of Windows — and now Java.

32-BIT BOOST

Steinbeiser said he expects New Holland's mobile sales force to take advantage of the Java client. Remote users will be able to use a World Wide Web browser to access the database over the Internet. Still, he expects the most business value to come from the move to a 32-bit Windows client.

Mike Morris, a manager at Pioneer Hi-Bred International, Inc., said he likes the improved performance of the new version, as well as the Java client. Hi-Bred, a biotech firm based in Johnston, Iowa, has used Applix Enterprise since Version 5.2 to support internal and external help desk functions.

"We need to port this thing over to Europe, but we don't want to have to replicate databases," Morris said. Accessing the database through a browser and the Java client might be the answer, he said.

Pricing for the help desk module starts at $14,995 for five users. Both the sales module and the service module start at $24,995.

And the integrated sales and service module costs $34,995. The full suite costs $44,995. □

December 8

Collaborating on a Global Scale

Global Innovators

Multinational corporations waste untold amounts reinventing the wheel in the various, disconnected parts of their company. That's why so many are concentrating on collaboration technologies and knowledge management systems. But technology is only part of the issue, especially on a global scale. The first step is establishing basic cross-cultural communication.

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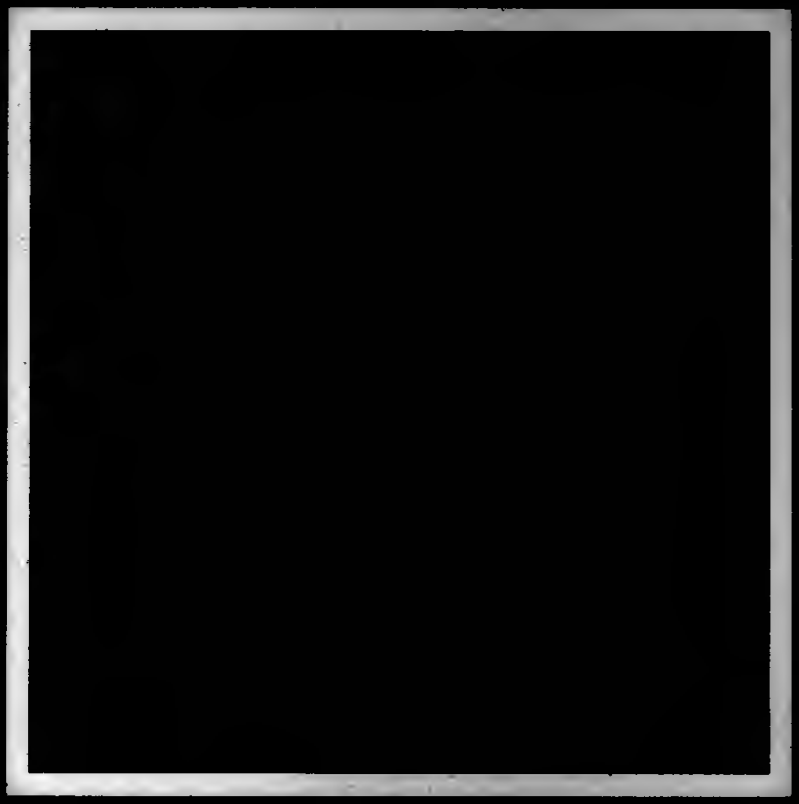

PEOPLE

Telecommuting trials, tribulations

▸ *Hidden setup costs lurk behind potential payoffs, installation hassles*

By Kim Girard
Orlando Fla

KIM MCGONEGLE recalls the day one of her company's telecommuting recruits ruled out the prospect or working remotely, fearing her garden would be ruined by all the digging required to install a telephone line After all, a colleague ended up with a 4-foot wide hole in the front yard.

"Installation is the ugliest process" said McGonegle new programs and systems manager at Western Reserve Life Assurance Co in Ohio, who spoke at the Telecommute 97 conference held here this month

Companies typically coordinate home installations with multiple software and hardware vendors that cater to specific workers' needs and work applications, but that make planning more complex

For example a programmer may require a dedicated frame-relay connection, whereas a manager may need an Integrated Services Digital Network (ISDN) line

To complicate matters, an ISDN line may cost a prohibitive $80 per month for a telecommuter in Washington but only $30 in California, for example

For all users connected to the network, remote access software must be tested and second phone lines or frame-relay connections must be installed — a process that can sometimes take valuable workdays to finish

Often, jumping from a pilot program — in which a company may be getting from a carrier an introductory deal per line — to a permanent program may cause phone costs to jump too

But it is the unexpected or less-than-obvious costs that trip up even the most organized of telecommuting program managers

For telecommuters, "installation is the ugliest process"

Still companies can take steps to avoid run-of-the-mill headaches vendor juggling and hidden costs

For starters there are setup costs It costs between $1 500 and $6,000 to set up a telecommuter, said Dan Merriman, an analyst at Giga Information Group in Cambridge Mass Users can expect 40% of that amount to go to the help desk which must be trained to tackle unfamiliar questions such as modem troubleshooting and ISDN configuration issues

"Companies don't think about this," Merriman said "You're dealing with someone over the phone instead of running down the hallway It's a slow pipe for communication You can't hop down the hall and have an engineer swap a board out " Merriman suggested standardizing on one type of modem and as much hardware and software as possible to simplify support issues

Nortel, Inc set up a separate help desk for its telecommuters Of the 27 employees devoted to supporting telecommuters, 15 are on the help desk

"We needed people with that knowledge base [Before starting a separate help desk], they were taking a week, two weeks to answer a problem," said Tony Smith, a telecommuting manager at Nortel

Companies also need to factor in management training For example, managers often must relearn how to manage employees who no longer work at the home office

REAL SAVINGS

To avoid losing money from sending employees home, it helps to better track real estate savings.

Companies should save between $1,500 and $5,000 per year in overhead and office space per telecommuter, said Gil Gordon, a Monmouth Junction, N.J.-based telecommuting analyst

Yet many companies with telecommuting programs don't track potential real estate savings or plan well enough to use freed-up office space, said consultant John Edwards, CEO of Telework Analytics International, Inc in McLean, Va

For example, if 10 people leave five offices and their space isn't well used you won't save anything, Edwards said.

"You need to sublet or make use of the space someone is leaving, or you're just spinning your wheels," Edwards said For example, one or two employees at a corporate branch office may give up their desks to telecommute Meanwhile the company pays out $5,000 to set them up at home but has no plans to recoup any savings by using the abandoned desk space. □

TELECOMMUTING TIPS TO SAVE MONEY

- **Establish a task force before working on a departmental policy.**
- **Outsource telecommuting technology to a long-distance carrier; some offer turnkey packages that handle everything from software installation to help desk needs.**
- **Have most of your telecommuters come from one office instead of from multiple offices.**
- **Put information about your telecommuting program on the company intranet. Nortel employees use the company's site to sign up to telecommute and order the necessary furniture and equipment.**
- **Ban all noncompany software from homebound machines, and standardize equipment as much as possible.**

Big savings for travel company

Telecommuting has paid off big at Holland America Line/Westours, Inc. in Seattle, despite some added up-front costs.

Specifically, the company had to provide support and training sessions for agents who switched move from terminals in the office to PCs installed in their homes, said Wendy Miles, a project coordinator and operations administrator at Holland America.

It costs Holland America up to $8,000 to install a desktop PC at home with a dial-up connection or ISDN line. That doesn't include PC training costs.

But the training time and money were well-spent for the travel company. Miles said nine of the company's telecommuters are doing the work of 10 in-office staff agents, probably because they are less distracted.

"They're taking 10% more bookings," Miles said. "That was the big showstopper for the CEO and president." — Kim Girard

Nine Holland America telecommuters can do the work of 10 in-office staffers

Marketers turn to data mining to fine-tune product pitches

By Craig Stedman

DATA MINING and database marketing software vendors are forming a union that corporate marketers said should help them tailor promotions to groups of like-minded customers.

Two vendors that make software for managing marketing campaigns last week announced plans to link up with data mining and statistical analysis tools used to build predictive models of customer buying habits

The promised integration has whet the appetites of users, who hope to get big paybacks by using data mining to match their product pitches to the right customers

"This could really tie data mining into the business process,' said Mike Eichorst, vice president of predictive modeling and data mining at The Chase Manhattan Bank Corp s consumer credit unit in New York "If the marketplace is shifting, you could discover that and react to it quickly "

Chase Manhattan's credit operation runs several data mining applications and is evaluating packaged database marketing software as an alternative to its own custom-built process for managing marketing campaigns, Eichorst said.

Exchange Applications, Inc. in Boston announced a deal to link its ValEx campaign management software with SAS Institute, Inc 's upcoming Enterprise Miner tool

Done properly, data mining can "translate to millions of dollars straight to the bottom line" – Wayne Eckerson, Patricia Seybold Group

The integration, due by March will let users hone in on selected groups of customers for predictive modeling rather than having to crunch through an entire database the companies said

Paragren Technologies, Inc. in Reston, Va., also introduced database marketing software with built-in ties to statistical analysis and data mining tools

Paragren officials said they initially will support Cary, N.C.-based SAS' namesake analysis software and products from SPSS, Inc. in Chicago.

Building and refining customer models is "a very slow and clunky process" for marketing departments, said Jeff Johnson, director of consumer marketing at American Security Group, Inc. in Atlanta

But the marriage of data mining and database marketing should make it possible to update models overnight, he said.

That would allow users to "make day-to-day decisions on how you want to set up your marketing prgrams," Johnson said

British Columbia Telecommunications, Inc.'s telephone unit already relies quite heavily on predictive customer modeling. "But one of the problems you have with a large customer base is getting the models into play," said Bob Boroski, manager of database marketing at the Vancouver-based BCTel phone operation.

BCTel now can only update its predictive models monthly — a process Boroski said he hopes to shorten by using a combination of ValEx and Enterprise Miner. □

The industry is still reeling

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DEC services strategy raises eyebrows

▸ *Product-line support a concern for users*

By Jaikumar Vijayan

DIGITAL EQUIPMENT CORP.'S growing focus on the services business has some users worried about the company's long-term commitment to its product lines.

At the company's recent annual meeting, CEO Robert Palmer predicted that Digital's worldwide service organization would be the primary driver of growth.

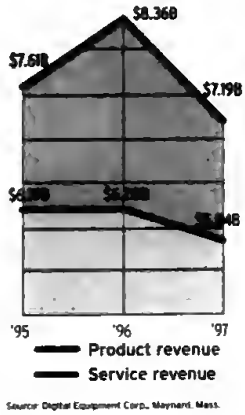
Analysts said the services strategy may work given Digital's experience as an enterprise player.

But first, Digital will have to convince skittish users that it isn't abandoning its hardware customers, analysts said.

For example, in a *Computerworld* poll in October, 63% of 102 users said they don't want Digital to focus on becoming a services company.

AT YOUR SERVICE

Digital's product revenue and service revenue have both been declining



Source: Digital Equipment Corp., Maynard, Mass.

Michael Felerski, a systems network manager for Butler County in Ohio, said he would be concerned about the future of his network investments if Digital sold its networking division to Cabletron Systems, Inc. as rumored.

Felerski said Digital's increased focus on service may be a good thing for users. But "what Digital needs to do is get out and let people know what is going on," he said.

"Digital is at a crossroads. They are no longer sure if they want to be a box vendor that does systems integration or a systems integrator that also builds boxes," said James Garden, an analyst at Technology Business Research, Inc. in Hampton, N.H.

But Digital said it will continue forward with its products as it wraps increasing layers of multivendor services around them, said Tom Iannotti, vice president of Digital's services organization.

"As opposed to positioning ourselves just as a vendor with superior technology, we want to go to market as a supplier of total services," Iannotti said.

But Digital still faces some challenges.

Over the past few years, Digital sold its relational database, storage, systems management and Alpha chip manufacturing operations. The moves have made Digital leaner and pumped more than $2.5 billion into its coffers, but they also have meant falling product revenue.

Also, more than 30% of Digital's services revenue still comes from legacy system maintenance. If those product sales continue to decline, then services revenue will come under increased pressure.

The company also faces rivals such as IBM, Hewlett-Packard Co. and Sun Microsystems, Inc., which are aggressively courting the services business — and also have strong product portfolios.

Other users said they agreed with Digital's emphasis on services. "Everything we have heard from them recently leads us to believe that Digital has a coherent strategy going forward," said Joe Pollizzi, president of the Digital Equipment Computer User Society in Baltimore. □

Oracle InterOffice merge points to Web integration

By Barb Cole-Gomolski

THE MERGING of Oracle Corp.'s InterOffice groupware and messaging server unit with its World Wide Web and electronic-commerce servers got a thumbs up from users looking for close ties between their electronic-mail systems and the Web.

The reorganization also may help Oracle compete more effectively against powerhouses Microsoft Corp. and Lotus Development Corp.

Officials at Redwood Shores, Calif.-based Oracle last week said the company will eliminate its Consumer and Collaboration Software division, moving the InterOffice piece into the Application Server Division.

The move will help Oracle create an "integrated platform for deploying transactional applications on the Internet," said division head and senior vice president Beatriz Infante. She promised "substantially better integration," between InterOffice and Oracle's Web software, but provided no specifics.

InterOffice is now in the high-profile group that Infante said is "charged with making network computing a reality." She said the company plans to aggressively market InterOffice as an alternative to products such as Lotus Notes and Microsoft Exchange. To date, InterOffice has been popular among existing Oracle customers.

INTEROFFICE MOVES

- Joe Duncan, the Oracle executive previously in charge of InterOffice, leaves the company
- The Consumer and Collaboration Software Division is eliminated
- The InterOffice product is moved to the Application Server Division

VISIBILITY COUNTS

John Irwin, project manager at Camp, Dresser & McKee, an engineering firm in Cambridge, Mass., said he would like to see InterOffice get "the same kind of visibility that Exchange and Notes have." Irwin said he is looking forward to tighter integration among Oracle's E-mail and Web products since the company has about 1,500 InterOffice seats and also uses Oracle's Web server.

Nina Burns, president of Creative Networks, Inc. in Palo Alto, Calif., said the move could help Oracle push what she called a convergent architecture, in which companies have a unified data store — such as Oracle's relational database management system — for Web content, E-mail messages and other corporate data. □

Intergraph sues Intel over microprocessor patents

By Jaikumar Vijayan

IT'S BACK to the courts for Intel Corp.

Just weeks after extricating itself from a potentially messy legal battle with Digital Equipment Corp., the Santa Clara, Calif.-based chip maker is being sued again — this time by Huntsville, Ala.-based workstation maker Intergraph Corp.

In a lawsuit filed in a U.S. District Court in Huntsville last week, Intergraph charged Intel with a series of coercive acts designed to make Intergraph surrender valuable patents.

> "Eventually, all these things end with out-of-court settlements before either company loses too much money."
> — Tony Massimini, Semico Research

Intel promptly countersued and asked a District Court in San Jose, Calif., to declare Intergraph's patents invalid.

Neither move is likely to impact users much, analysts said. But the case once again is apt to highlight just how complicated it can be to enforce patents in an industry where virtually everybody uses similar technology in building chips, analysts said.

"Eventually, all these things end with out-of-court settlements before either company loses too much money in legal fees," said Tony Massimini, an analyst at Semico Research Corp. in Scottsdale, Ariz.

CLIPPER LINE

The patents in question relate to Intergraph's Clipper microprocessor. The Clipper was one of the industry's first reduced instruction set computing computing microprocessors. It was developed by Fairchild Semiconductor Corp.'s Advanced Processor Division, which was later acquired by Intergraph. The chips were used in Intergraph's Unix systems before the company migrated all of its technologies to Intel architecture in 1992.

In its suit, Intergraph claims that Intel is using its dominant market power to pressure Intergraph to give up valuable property rights, particularly those related to cache memory management.

But Intel claimed that Intergraph is trying to enforce the same patent "against virtually every OEM in the industry." □

Luc W Adriaenssens,
Systems Applications Director
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OPINION

Improving the odds

I was wading upstream through the crowds at Comdex last week alongside a CIO from a New Jersey-based global manufacturer. This longtime veteran of the massive trade show is a plainspoken guy. When we got to the sprawling, busy Novell booth, he looked around in surprise.

"Everybody I talk to has written them off. You just don't see a future as a customer," he said. Echoing the stories of so many of the users we talk to, he said his NetWare servers are gradually being replaced with Windows NT Server, despite his belief that Novell products are technically superior and far more scalable and robust than NT.

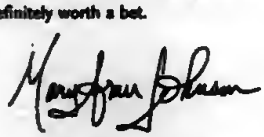
But in the most basic business survival terms, he said, he feels Microsoft will be around in five years and Novell won't.

The next day, I was part of a *Computerworld* interview with Novell CEO Eric Schmidt, who talked with us in depth about what he's doing to save this onetime powerhouse networking company. (A portion of that interview is on page 12 of this issue; an expanded version is online Tuesday at *www.computerworld.com/home/online97.nsf/All/971121interviewA782.*)

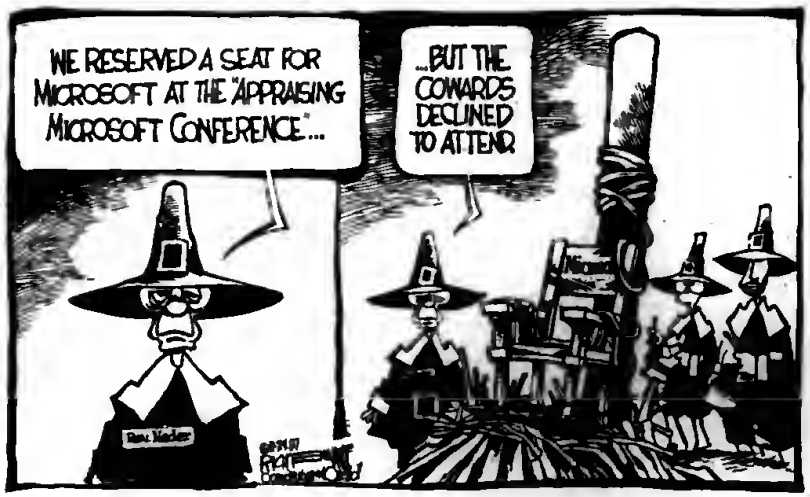
Schmidt is acutely tuned in to the "mind share" ills plaguing Novell, which ironically are cresting just as the company brings to market a series of innovative products such as IntranetWare. Behind the scenes, he's been refocusing Novell's historically scattered marketing efforts and pushing his engineers not only to innovate, but also to meet their product deadlines.

But what impressed me most during our long talk wasn't so much his list of strategic deliverables as his calm sense of mission and a clear focus on how to make Novell an important part of what he calls the "new face of the network" — a varied, multiplatform, interoperable, standards-based network with room for plenty of players. The opposite of monopoly rule.

Now, maybe it was the influence of Vegas. But I found myself thinking his odds of pulling off this turnaround were definitely worth a bet.



Maryfran Johnson, *Executive editor*
Internet: *maryfran_johnson@cw.com*



LETTERS

Readers weigh in on Gates vs. Reno/Nader

COMPUTERWORLD'S headline concerning the Justice Department's attack on Microsoft ["Users side with Reno," CW, Oct. 27] shows a lynch-mob psychology and a sour-grapes attempt of the mediocre to hurt the good.

The major point of discussion is the inclusion of Internet Explorer as part of the Windows operating system. It should be clear to anyone that as the world of computing changes, operating systems must include Internet-based data access.

Note that the same day that the antitrust suit against Microsoft was reported, Netscape released its earnings report, with sales up more than 50% and earnings that exceeded expectations. Some monopoly Microsoft has.

I would like to continue to have the choice to buy the best that Microsoft can dream up without the permission of the Justice Department.

Scott Crosby
Mauldin, S.C.

I LOVE THE MAC and wish it had been marketed better and won against MS-DOS and Microsoft Windows.

But I believe we made Microsoft Chairman Bill Gates the richest man in America because he provided us with more value than anyone else. I believe he earned his wealth.

Pursuing Microsoft for antitrust is plain wrong, and U.S. Attorney General Janet Reno is plain wrong. Compare $1 million per day to the usual fine of $10,000 per day to see why. Or read Ayn Rand's *Atlas Shrugged* again.

Jack Crawford
Software engineer
Silver Spring, Md.

Article fails to mention SAP's progress with R/3

IT WAS DISHEARTENING to see the Nov. 10 *Computerworld* cover article "SAP to Nuts" focusing on the implementation and configuration issues of early SAP customers. We have invested heavily in initiatives for rapid implementation and flexible configuration and have seen positive results. Currently, 61% of all customers implement R/3 in an average of nine months or less, and 94% implement it in less than 18 months. SAP has not only made it easier to change and expand R/3, but has essentially eliminated implementation concerns. None of this progress was mentioned in the article.

This article fails to live up to *Computerworld*'s high standards of balanced coverage. It is largely based on one unnamed source, and your reporter has never had direct contact with SAP. Many industry analysts have noted that our Accelerated SAP implementation methodology has won widespread acceptance for reducing implementation time and cost. Given that implementation challenges aren't unique to SAP, it is curious that you failed to provide a larger, marketwide perspective.

Paul Wahl
CEO
SAP America, Inc.

I AGREE WITH everything Dan Gillmor said in his Oct. 27 column in *Computerworld* ["Nader may be the true Microsoft threat"].

Attorney Gary Reback may be a nice guy and correct, but he is too damn professorial and reserved. The anti-Microsoft forces need an attack dog.

> Attorney Gary Reback may be correct but he s too re served. The anti-Microsoft forces need an attack dog

Ralph Nader is OK. Scott McNealy might get the job done. And Gates may help by playing the bully role to the hilt.

Keep up solid journalism like the above, and I'll be forking over some money for your paper. Your article was pithy, had fresh news and had overall vision of what may be coming down the pike.

John H. Staples
Staples Technology Research, Inc.
Houston

Computerworld welcomes comments from its readers. Letters shouldn't exceed 200 words and should be addressed to Maryfran Johnson, Executive Editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

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23. Dir./Mgr. Sys. Development, System Architecture
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(b) NetWare (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTStep

App. Development Products ☐ Yes ☐ No
Networking Products ☐ Yes ☐ No
Internet Products ☐ Yes ☐ No

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Is Microsoft too powerful?

▸ The company is the subject of Justice Department complaints, a consumer activist conference — and countless snide remarks on the Internet. Is Microsoft too powerful? Computerworld asked IS executives, industry observers and policy-makers. Some responses follow.

Allan Ditchfield

Chief information officer, Progressive Insurance Village. The Mayfield, Ohio-based company has 12,000 end users.

. "Yes. They appear to hold 90% of the desktop operating system market. They are a monopoly. It's apparent that both the government and other folks — like Ralph Nader — think [Microsoft isn't] acting responsibly. From an enterprise user's perspective, an inflexible monopoly is not healthy for us. Microsoft needs to shed its arrogant attitude and openly debate these issues."

Geoffrey Moore

CEO of The Chasm Group, a high-tech industry consultant in San Mateo, Calif., and author of "Crossing the Chasm."

"No. Microsoft is like a new species exploiting a gap in an ecosystem. Until it reaches its natural boundaries, it is seemingly undefeatable. This creates a temporarily unbalanced ecosystem which is dangerous for all involved, including Microsoft. But it will reach its natural boundaries eventually, as expansion requires value-chain cooperation, and we see a growing number of companies organizing in increasingly complex ways to block its future plans. Intervention in the meantime, however, isn't likely to work. But it could set a terrible precedent."

Jim Fox

Director of information systems at Union Pacific Railroad, Omaha.

"My personal belief is competition is good. When somebody locks up the market or locks up a particular sector, that's not good.

"From a strategic point of view, we think open systems and what Sun and Oracle and IBM are doing with Java and with what the Internet is doing to open up this whole industry is the right thing to do. We're very cautious about Microsoft's application development tools, in terms of ActiveX only running under Microsoft's operating system. Microsoft is a great company. It has a lot of great products and great tools, but we don't want them to own the market. We don't want them to own the IT industry."

Sen. Orrin Hatch

(R-Utah), chairman of the Senate Judiciary Committee.

"There is reason to be concerned that Microsoft is attempting to use its market power to prevent new innovative technologies, which challenge Microsoft's desktop monopoly, from competing on an even playing field. The government certainly should *not* use antitrust laws to pick winners and losers in the marketplace, but it *should* use them to ensure that it is the *consumers* who get to pick the winners and losers, based on the merits of competing products."

Tom Jeffrey

Vice president of information services at KB Toy Stores, in Pittsfield, Mass., a chain of more than 1,300 stores.

"Microsoft is very powerful, and they need to be conscious not to abuse that power. But I am more concerned about the Justice Department's ability to decide what's too powerful in the digital economy. This is a great American company, and I would hate to see them weakened in their ability to compete globally." □

Work hard on year 2000 — or on an excuse

Michael Cohn

Don't shield your eyes. Don't cover your ears. By now, you're probably sick, sick, *sick* of the year 2000 crisis.

But by now, you're probably also one of the unappreciated few who is fixing this mess. You're inventorying. You're changing code. You're exhausted.

Still, there are some folks out there who are struggling. They're about to start and have been for about 18 months.

You folks need a year 2000 excuse, and you need one quick. I'm here to help. Just choose one of the following explanations:

"Year 2000? Must be important. Heck, it was on the cover of *BusinessWeek*, right? We're all over it. We're negotiating with vendors. We're evaluating tools. We're interviewing offshore providers. Unfortunately, we still haven't fixed one line of code. But someday, if we do, I'll bet we get one hell of a price."

"Year 2000? Must be important. Heck, it was on National Public Radio, right? But we're unaffected; everything's new. It's all Windows 95. Our oldest system was coded last Thursday. We're all set! In Gates we trust! Although Microsoft does recommend we upgrade to Windows 1995, just in case."

"Year 2000? Must be important. Heck, it was just in *Parade* magazine, right? We've talked about freezing production and contractor rates until 2000. We've even talked about freezing if there's no heat in 2000! We've talked like the dickens but still haven't done squat — because our budget's frozen till 2000."

A few ready-made answers to year 2000 queries.

"Year 2000? Must be important. Heck, it's even been in 'Dilbert,' right? But we're done! Our vendor told us by December '99 it'll send new software that is year 2000-compliant, whatever that means. So I can say with full confidence that I've got plenty of lead time; it'll only take me 30 days to bang out a resume, line up an interview and get the heck out of Dodge." □

Cohn is a computer consultant in Atlanta.

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Briefs

TO THE 'NET

User plans for electronic data interchange (EDI):

- Combine EDI with increased Internet use
- Stay with EDI alone
- Move from EDI to Internet-based commerce
- Other/Don't know

Base: 247 IS managers at large organizations

Source: "The Hyphen Report," Berkshire, England

• As part of business process reorganization

Sonoco outsources desktop support

By Jaikumar Vijayan

SONOCO PRODUCTS CO., a $2.8 billion packaging company in Hartsville, S.C., is outsourcing its entire PC support operation as part of a wide-ranging business process reorganization aimed at doubling sales by 2000.

Sonoco's moves reflect a trend by companies to outsource part or all of their PC support infrastructure.

Entex Information Services in Rye Brook, N.Y., is handling the multimillion-dollar project. It will provide a range of PC acquisition services, help desk support, asset tracking, installation, desk-side support and remote networking services. The companies didn't disclose the financial value of the deal.

The objective of the three-year arrangement is to help Sonoco standardize PC hardware and software, increase PC productivity and trim the cost of supporting 3,000 Sonoco PC users in 170 locations around the country, said Bernie Campbell, chief information officer at Sonoco.

"The decision to outsource desktop support was made about two years ago when we were making major changes to our computing infrastructure" as a result of the business process reorganization, he said.

One of Sonoco's biggest system changes was a massive migration from a mainframe-centric environment to one that uses client/server technologies.

"In the new environment, PCs were becoming a much more integral part of our overall business operation. '... So we decided we needed a more standardized PC infrastructure at least partly to facilitate implementation of some of the new [client/server packages]," Camp-

Sonoco, page 40

Making $ense of Y2K testing

▸ *Canadian bank downplays cost-effectiveness of logical partitioning for year 2000 tests*

By Thomas Hoffman

DOES IT MAKE $ENSE to set up a stand-alone "time machine" for year 2000 testing? Executives at the Canadian Imperial Bank of Commerce (CIBC) say yes, in spite of the extra costs.

Last year, executives at the Toronto-based bank decided to set up an independent IBM 9672-R54 mainframe to handle integration testing with the hundreds of banks, data services and other partners in its supply chain.

"We saw the danger of doing it the cheap way and didn't want to contaminate our production environment," said Joe Boivin, director of the year 2000 program at the bank.

THE USUAL

The "cheap way" to which Boivin referred is the popular approach of setting up logical partitions of mainframe CPUs for integration testing.

Like other organizations, CIBC uses such partitions to certify code changes and date simulations.

But that's where the similarities end. CIBC officials said

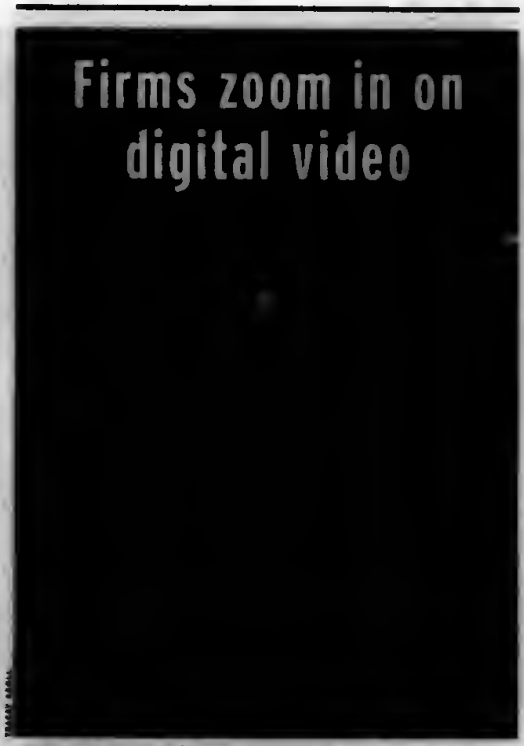
Making $ense, page 40

COMPARING COSTS

Annual cost per MIPS	$1,115	$445	$10
Annual software MIPS	5,000	5,000	4,500

Source: Gipa Information Group, Cambridge, Mass.

Firms zoom in on digital video



Anthem Blue Cross/Blue Shield's Melissa Datre: A new digital video system has reduced editing costs

By Nancy Dillon

MELISSA DATRE'S company used to spend $10,000 on every seven-minute video it produced for its clients. Now the videos cost one-tenth as much.

Datre is the multimedia coordinator at Anthem Blue Cross/Blue Shield in North Haven, Conn. In July of last year, her group purchased a complete in-house digital video editing system from a reseller. She uses the system to produce post-sales videos to educate clients about their customized health plans.

"Because we recovered the up-front cost of the system with the first video we produced, the only significant fees associated with new projects are related to my work hours," Datre said.

The majority of the cash savings comes from not having to pay hourly fees at professional editing studios, she said.

Further savings result from better control over digital video archives.

Digital storage allows Datre to create generic video segments that apply to all clients and can be plugged in to each

Firms zoom in, page 40

intel
inside
pentium II

Making $ense of year 2000 testing

CONTINUED FROM PAGE 37

that unlike other organizations that partition to cut expenses, it is worth the extra costs to maintain a separate mainframe for integration testing.

BIG BILLS

Those extra costs include additional hardware maintenance and secondary software licensing costs, which can be hundreds of thousands of dollars for a large user such as CIBC, observers said.

Others have trouble cost-justifying those extra expenses. Colin Rankine, an analyst at Giga Information Group in Westport, Conn., said second software licensing bills are often five times greater than hardware costs (see chart).

That's why Rankine said he recommends that Giga's clients carve out a logical partition on an air-cooled mainframe for year 2000 testing.

"People are hitting a nail with a sledgehammer if they keep a production CPU around for testing," he said.

Testing through a logical partition "is probably the most cost-effective thing for us to do," said Steven McManus, communications manager on the millennium project team at BankBoston Corp.

Breaking out a logical partition is probably most cost-effective for for BankBoston

IN THE DISTANCE

Year 2000 testing is still a long way off for most organizations that are still in the assessment or remediation stages.

But the Boston-based bank began testing some of its renovated applications last year and has so far certified 45 of its programs, including some of its finance and accounting packages, McManus said.

Mutual of Omaha Co. is another company that has gone the logical partition test route, though less so for financial reasons.

The Nebraska-based insurer has carved out a piece of its IBM 9021 mainframe for regression testing to make sure code fixed for year 2000 bugs works with its existing applications.

That approach "cuts down the impact on our business analysts" because the company's year 2000 programmers are able to modify source code, test it and then re-enter it into production without having to pull business analysts from their production work, said Chad Bridges, a year 2000 test manager at Mutual of Omaha.

"We don't have a lot of free [business analysts] to help us" with year 2000 testing, Bridges said.

By testing through a logical partition, companies such as Blue Cross/Blue Shield of Michigan know they are "testing in the same environment as where our applications normally run," said Bill Allen, a systems audit manager at the Detroit-based health-care insurer. □

YEAR 2000 TEST BED APPROACHES

	Stand-alone system	Logical partition	Software simulation
Total software cost	Highest	None to moderate	None to moderate
Total hardware cost	Highest	None to moderate	Low to moderate
Resource reuse	Difficult	Yes	Yes
Granularity	Poor	Poor	Excellent
Full system test	Yes	Yes	Difficult

Source: Giga Information Group, Cambridge, Mass.

CPU shortage

Organizations that are testing for the year 2000 bug with stand-alone systems have contributed to a severe shortage in the used CPU market, observers said.

Adding to the demand is a dramatic drop in prices for air-cooled IBM 9121 machines. Those costs have plummeted from $500,000 to $600,000 two years ago down to $100,000 to $150,000 today, said Tom Vallone, executive vice president of Comdisco, Inc.'s leasing division in Rosemont, Ill.

The IBM 9121s, which typically range from 90 to 115 MIPS, provide users with enough power for their year 2000 test requirements, Vallone said.

— Thomas Hoffman

Sonoco outsources

CONTINUED FROM PAGE 37

bell said.

Sonoco's moves reflect a growing trend by corporations to outsource part or all of their PC support infrastructure, said Elena Christopher, an analyst at Dataquest in Westboro, Mass.

"Cost saving is certainly an issue, but it is not the only one behind such decisions," Christopher said. Other reasons to outsource include providing better service and support, thus improving end-user productivity, and seeking better systems management by implementing standards, she said.

"It is an attempt to bring some semblance of order to the chaos" that is typical of many PC environments in corporations, Christopher said.

The deal will help Sonoco standardize PC hardware and software

In the first phase of the project, Entex will convert Sonoco's existing wide-area network to a frame-relay network. Then it will establish a single-point-of-contact help desk, under which Sonoco end users can call Entex's help desk in Mason, Ohio, for hardware and software problems.

Putting together a project of that scope — and making sure it works — isn't an easy task, Campbell conceded. "We have done enough outsourcing in the past to realize that for these things to work, you need day-to-day, hour-to-hour contact between the customer and the vendor," he said.

To ensure that the project stays on track, the companies have executed service-level agreements that will monitor key aspects of performance and service delivery through the length of the contract.

Sonoco has three employees assigned to monitor the relationship with Entex and act as point persons to handle issues.

In addition to an 11-page outsourcing contract, Sonoco has also drawn up a 400-page document, listing specific business goals, terms and conditions aimed at keeping the whole effort on course, Campbell said. □

Firms zoom in on digital video

CONTINUED FROM PAGE 37

custom piece. That means new production on each video comprises only customer-specific information.

As a result of cost and time savings, Datre said she can produce about 20 videos per year, up from two productions in past years.

EASIER TO USE

Many companies are investing in digital editing because digitized video is easier to work with than video on linear tape.

And its improved ease of use reduces the cost and time associated with editing functions, said Ralph Rogers, an analyst at Dataquest in San Jose, Calif.

"In the past, the process of editing and sequencing video involved a significant amount of production talent. But digitized video and software tools make sophisticated procedures easy," he said.

Rogers said the only significant deterrents now facing companies considering digitized video are those related to artistry, staff design skills, for example, and the ability to convey a compelling message.

Digitized video is still a new market: Worldwide sales of video editing boards for computers reached $160 million last year and are expected to grow 25% per year through 2000, Rogers said.

Rogers said that along with training and education, sales-based applications also drive the adoption of in-house editing systems.

INCREASED PRODUCTION

Anna Schoenfeld, video editor at BJ's Wholesale Club, Inc. in Natick, Mass., said her company justified the expense of a digital video system in two ways. First, the showcase videos that she produces for the 85 East Coast BJ's stores help boost sales of seasonal products, CD's, books and jewelry.

Second, the videos include advertisement slots that are sold to product vendors.

Schoenfeld produces general club update videos that play on overhead TVs throughout BJ's stores, as well as product-specific videos that play on dedicated monitors next to product displays.

"We used to only do one monthly entertainment tape and five seasonal videos a year. But since I've started editing [them] myself, we've been able to produce lots of extra infomercials," Schoenfeld said.

She said she was able to produce 30 projects last year. "We can accommodate this increase because we're not running up hefty bills at editing studios, which can cost $150 to $300 an hour," she said.

Both Anthem Blue Cross/Blue Shield and BJ's Wholesale Club have Windows NT systems that use digital editing software from Avid Technology, Inc. in Tewksbury, Mass. Other vendors of digital editing systems include Radius, Inc. in Sunnyvale, Calif., and Scitex Digital Video, Inc. in Redwood City, Calif. □

FROM THE EDITORS OF
COMPUTERWORLD
VOLUME 2, NUMBER 8
NOVEMBER 24, 1997

Intranets

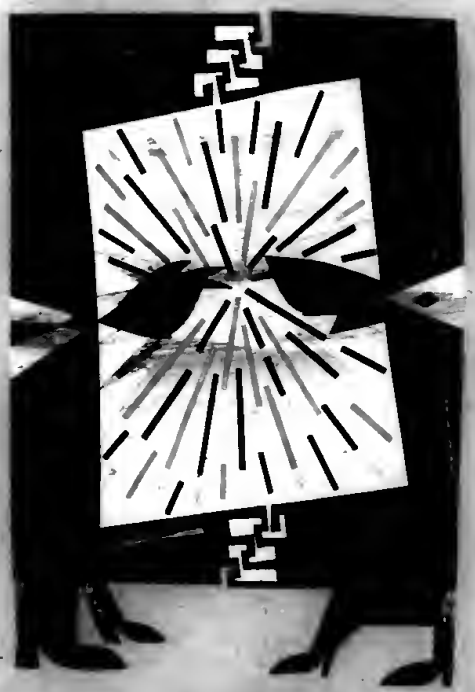
A MONTHLY LOOK AT WEB DEVELOPMENTS BEHIND THE FIREWALL

THE NEXT GENERATION

Imposing Order From Chaos

As intranets mature, many technical challenges emerge

By Paula Rooney



In the beginning of the intranet era, Web servers and applications cropped up willy-nilly, with no executive oversight. But as the corporate intranet matures, a central vision and a well-designed architecture — as opposed to *mob* rule — becomes necessary, information technology officials say.

Where once the major headache was creating and updating content, now it's grappling with interactive applications, bigger files, more pages and new users. And with that array of concerns comes wide-ranging needs: to establish a common architecture and a common look and feel for applications across the company, to establish links with legacy applications, to increase bandwidth and upgrade the network architecture and to parlay existing applications on the new network rather than reinvent the wheel.

This is a tall order for most companies.

Glenn Newell is somewhere between generations. With 200 Web servers, he's angling toward Phase II. "We're trying to transition from a grassroots envi-

INSIDE ▪ PRATT & WHITNEY, PAGE 2 ▪ CAPITAL GROWING PAINS, PAGE 11

THE NEXT GENERATION

Continued from page 1

ronment to one with more infrastructure," says Newell, senior engineering manager of intranet technology at National Semiconductor Corp. in Santa Clara, Calif.

National Semiconductor has just begun to impose order on its intranet and upgrade it for prime-time use. On the order side, the company is evaluating statistics packages for monitoring intranet traffic and recently decided to standardize on Netscape Communications Corp. servers to ensure technical support on demand. Where upgrades are concerned, the company plans to roll out Progressive Networks, Inc.'s RealVideo application for training, and it's looking at IP multicasting and Asynchronous Transfer Mode to accommodate it. But for now, the company's intranet is still a grassroots effort with much work needed, Newell says.

Newell is hardly alone. "It's a real free-for-all out there," observes Bob Gett, Boston-based president of Silicon Valley Internet Partners, a consulting firm that specializes in corporate Internet and intranet issues. As a site enters its second generation, Gett advocates organizing it with a common look and feel, then standardizing on publishing, messaging, database access and search engines to create more synergy across departments.

An employee in human resources, for example, should use the same search engine as a co-worker in the finance department if they are to collaborate effectively on the same database, Gett explains.

The Chase Manhattan Bank NA has a maturing intranet: 15,000 browsers, 50 intranet servers and 20 more in the offing for next year. (The company tripled its floor space during the past year to accommodate the intranet server farm, an official notes.) It also has a foothold where common interfaces are concerned. The company established a rule book for designing intranet servers; it details how and where the company logo should be placed, for example, and how frames should be set up. Chase Manhattan's corporate marketing and technology groups, charged with setting these rules and with intranet planning, also decided to create navigation bars specifically for the intranet.

One piece of standardization came easily after Chase Manhattan merged with Chemical Banking Corp. last year: The group adopted the look and feel of the intranet from one of Chem-

A Grassroots Intranet Built With Foresight

The opening lines of Pratt & Whitney's home page says it all: "We provide thrust."

Certainly, the jet engine company, an East Hartford, Conn., division of United Technologies Corp., is taking that mission seriously on the intranet front. It set up its first intranet server in July 1995 and now has three servers serving more than 9,500 IP addresses in seven branch locations.

Being a longtime Unix-based company and TCP/IP shop gave it an edge. But the company's IT group has also covered many of the bases deemed most important to creating mature intranets: the need to adopt standards quickly; create internal programs and CGI scripts that let browsers access legacy and client/server applications; scale up servers significantly for the mounting volume of data; and use new tools to isolate and monitor intranet traffic. It has even created a team focused on intranet planning — the Intranet Web Council — to oversee planning of the network and its content, and it hired an intern this summer to try to nail down a way to calculate intranet return on investment.

Today's applications include an extranet on which business partners can exchange information, a setup that has allowed Pratt & Whitney to reduce inventory storage by 15% and save $10 million in one year. Yet the excitement of the company brass over the extranet and Internet is translating those results internally demonstrate how the days of ad-hoc development are over.

"When we started, it was a grassroots effort," Webmaster Kevin Redding recalls. "It wasn't a management directive to set up an intranet, but we put it up, and it has become such a hugely used tool internally [that] they are saying, 'Go for it.' "

Getting the intranet where it is today has been a cumulative process.

First, Pratt & Whitney standardized on Netscape servers and browsers because it is a big Unix shop. That makes a lot of sense for the IT staff, Redding explains. "We're a Microsoft Office shop, and we're looking at both Unix and NT. I'm constantly fighting the battle of, 'Why not use Microsoft Internet Explorer?' but it doesn't run Unix. And we only want to have one product to support and update."

Then the company began integrating tools to tie the intranet into Oracle databases, such as the human

ILLUSTRATIONS BY PHILIP ANDERSON. PHOTO BY TRACY KROLL

TO ACHIEVE A common look and feel among its intranets, Chase Manhattan took the design of a Texas subsidiary's 'net companywide.

ical's banks, Texas Commerce Bank.

"Our intranet has its own look and feel and navigation that's consistent across the company," says Mike Mazza, manager of government and Internet services at Chase Manhattan in New York. "It has an employee-centric view with links to existing application servers."

Beyond the look and feel issue, Chase Manhattan wanted to exploit its applications base rather than create whole new intranet applications. So it is migrating much of its corporate data from more than 600 Lotus Notes servers worldwide to Lotus Development Corp.'s Domino servers, the Internet version of the proprietary Notes groupware platform. This, Mazza explains, will let the company leverage its considerable investment in Notes development for the intranet.

NETWORK ISSUES

Network infrastructure is another piece of the picture that companies can leverage to get their intranets started, though often it just provides a start. Many companies have supported the TCP/IP protocol for some time, which explains, in part, the speed at which companies worldwide are adopting Internet technology. But that doesn't mean that network upgrades to increase bandwidth and more servers to manage growth won't be necessary down the line. That was the case at Chase Manhattan, Mazza says.

"We did a redesign of the network so that every router talks TCP/IP," he says, noting that in addition to upgrading router firmware, Chase Manhattan upgraded server hardware to handle the increased intranet traffic. And because company officials want to provide interactive video training applications over the intranet, the

Continued on page 6

resources database. This will allow employees to change relevant data from browsers instead of logging on to a mainframe. The company developed a CGI script that enables them to do this.

Now it is also evaluating a number of intranet management products — Linkbot from Tetranet Software and WebTrends from e.g. Software — for optimizing system resources.

The company has begun using Linkbot, which finds broken links, in production and has high hopes.

"It's a real recent effort. But in six months, we want to say we cut down the number of broken links by 47%. One of our biggest problems is that information on the intranet is old," Redding explains.

With WebTrends, the company hopes to find out why PostScript files — instead of the preferred Portable Document Format files — are floating around the intranet.

To better manage the amount and quality of data on the network, the company has also dramatically reduced the number of authorized content developers from more than 200 to a "more manageable set," Redding says, calling them the intranet "gatekeepers."

Another major effort under way is scaling up servers — to dual 300-MHz Sun SPARCstations with 1G byte of memory, 24G bytes of storage and high-speed Fiber Distributed Data Interface and ATM access. That's compared with SPARCstations that have just 9G bytes of storage.

"Scalability is a huge issue," Redding says, adding that storage at Pratt & Whitney's intranet is now running at 70% of total capacity.

For Redding, anticipation is half the battle. "The intranet will continue to grow faster and faster because we're developing more applications, it's more platform-independent, and we have more user interfaces for Web access. The server has to deal with more of a load."

— PAULA ROONEY

"THE INTRANET WILL continue to grow faster and faster because we're developing more applications."

KEVIN REDDING, PRATT & WHITNEY

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Continued from page 3

push has been to upgrade from Ethernet and Token Ring connections to Ethernet switches. Additionally, Mazza decided to deploy two Internet protocols — BOOTD and Dynamic Host Configuration Protocol — rather than deploy IP on every desktop. With this, users can access an IP address on the fly from a pool of IDs, thus eliminating the need to install and support IP at every desktop, Mazza says.

"WE'RE ADDING more pages, more volume and more users. It comes back to handling bandwidth issues."

MIKE MAZZA
CHASE MANHATTAN BANK

"We're adding more pages, more volume and more users," he says. "Disk space and memory are not issues. It comes back to distributing multiple servers and handling bandwidth issues."

Yet one of the difficulties in handling bandwidth issues is that it's tough to isolate intranet traffic from other corporate data traffic, IT professionals maintain. Traditional network management platforms from Sun Microsystems, Inc., Hewlett-Packard Co. and IBM support the IP protocol, but separating intranet traffic from Internet and extranet traffic complicates the effort.

More packages geared just to intranet traffic are on the way, however. At Internet World this spring, HP unveiled five management solutions specifically for the intranet. IBM's Tivoli Systems, Inc. division recently announced its first intranet/Internet management platform, dubbed Net.Commander. Then there are the Internet start-ups, including Haht Software, Inc., Tetranet Software, Inc. and e.g. Software, Inc., that are racing to fill the gap. All these tools will dramatically help companies build and support second-generation intranets and realize their return on investment, experts predict. "The new tools are weak but maturing," Mazza says, noting that standardization is also an important consideration for administration and monitoring networks.

Many companies are in the same boat. "We're not far enough down the road to know all the bandwidth issues, but we want to isolate intranet traffic to help us figure it out," says Alan Baren, a Jersey City, N.J.-based Internet strategist in the Strategic Technology Group of Coopers & Lybrand LLP, which has a U.S. TCP/IP network and is currently building a global one.

For Baren and others, however, it's not the maturity of intranet tools that is irksome but the excess of new tools and technologies hitting the market. "There is such an escalation of tools out there, it's hard for people to evaluate them all. I don't recall it being so dramatic — or so fast — during the client/server era," Baren says. "This means that we'll have to have technologists specialize in the many new technologies and tools out there, such as 'push' technologies and how to tie in legacy applications to the intranet."

While Microsoft Corp. and Netscape browsers and servers have emerged as the de facto standards in their respective markets, the jury is still out on which companies will be the standard-bearers for other important intranet technologies. There are nine or 10 vendors of push technologies, for instance, and the lack of a clear leader is hindering adoption as well as confusing those in IT. "There are so many new tools and technologies out there, you just have to wait and see who the winners are," says Kevin Redding, a Webmaster at Pratt & Whitney, an engineering firm in East Hartford, Conn., that has three intranet servers serving about 10,000 IP addresses in seven locations in the U.S. (see story, page 2).

GETTING A GRIP

Application development is another area rife with challenges when intranets reach the second generation. The ability for virtually anyone to become an application or content developer means that companies are going to have to set limits on who can do what, when.

Moreover, the temptation — or tendency — for users to write or rewrite many corporate applications could cost a company significantly if not monitored closely. Like Chase Manhattan, which migrated its Notes applications to Domino, Coopers & Lybrand's Baren agrees with not reinventing the wheel. "Let's not build an application in Java just because we can," he says. "You have to look at where the intranet provides unique value, such as in true real-time appli-

PHOTOGRAPH BY BRIAN SMALE

cations or community-building applications like chat. We have to foster use of the technology in an efficient way and prevent duplication."

Coopers & Lybrand, as well as IT executives at several other companies, say this is particularly important as application development for intranets moves beyond simple publishing and "brochureware" to two-way, interactive applications and line-of-business applications. Integrating intranet technologies with the existing infrastructure, as well as with legacy and client/server applications, may be complicated but will likely pay off in more ways than rewriting everything in Java and HTML, Baren notes.

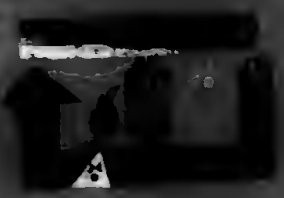
Coopers & Lybrand, for example, is working on a project with Microsoft to use Active Web Pages for object queries against data in Coopers & Lybrand's Oracle Corp. database, and the company plans to build more intranet applications with Lotus' Domino. By using the application development, management and security features in Notes, developing intranet applications is a snap, Baren says. It also means the company can parlay the skills of its staff rather than hunt down Java experts unnecessarily. "If you don't think these things through, there will be a greater cost of ownership," Baren says. "The technology may be easier than before, but just as much planning needs to be done on the intranet side as with client/server environments."

This is true indeed, according to a recent intranet return on investment (ROI) study that consulting firm Meta Group, Inc. conducted. It found that "the highest returns were generated by mission-critical applications that support line-of-business activities and processes... and these tended to be more complicated applications that were integrated with existing legacy applications."

While "significant applications" can

Continued on page 10

Getting Your Arms Around ROI



As the corporate intranet matures, with the often incumbent need for more resources, the cry for return on investment (ROI) grows louder.

Two camps are having good news, while a third despairs.

A recent ROI analysis of corporate intranets by Meta Group, Inc. shows that 69% of companies surveyed enjoy a positive intranet ROI, with an average annual return of 38%. A positive ROI means companies are faring better than breaking even on their investments.

The results were even better for corporate applications such as inventory management (85%) and database access (84%), both long-by-second-generation applications. Why? Because many firms are able to exploit their existing corporate applications rather than develop new ones for the intranet.

Nevertheless, many firms with maturing intranets, including Chase Manhattan, Pratt & Whitney and Coopers & Lybrand, are having a tough time quantifying the gains intranets. "No one knows what the ROI is yet," says Bob Hall, president of Silicon Valley Internet Partners. "There is a business case for having one, but citing the value is elusive. Companies have yet to prove the economic advantages of it yet."

Pratt & Whitney is one company taking a shot at it. The engineering firm this summer hired Heather Pangra, an MBA candidate from Purdue University, to analyze the rate of return on Web projects for the firm. It's been easier getting a handle on intranet time on Internet ROI because the costs for building an intranet had to be justified, she says. Setting up an intranet with business partners let Pratt & Whitney cut inventory storage by 10% for a savings of $10 million in a year. It also cost added revenues of $40 million in excess capacity by selling parts over the Web, she says.

But Pratt & Whitney managers have had a harder time calculating an ROI on [illegible] applications, as implementation costs haven't been tracked.

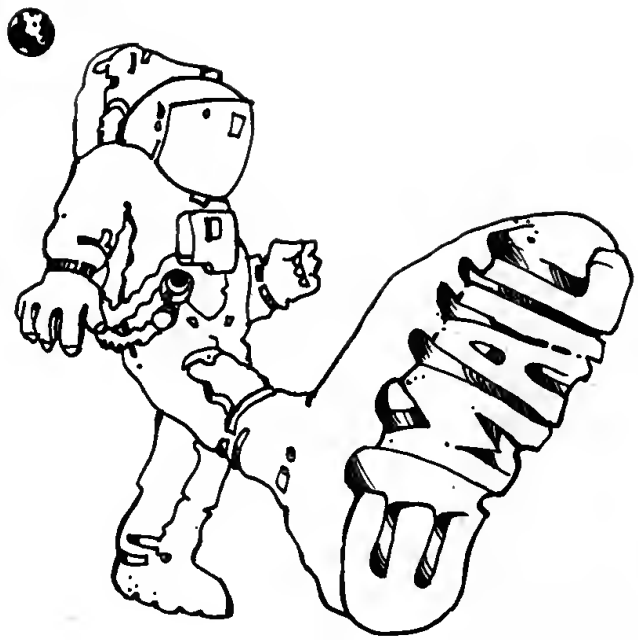
— PAULA RIDDLE

High Fliers

Intranet apps with the highest projected ROI

Database access	69%
Inventory management	53%
Customer service	47%
Commerce	46%
Collaboration	46%
Average annualized return	38%
Order management	27%
Publishing	21%

Source: Meta Group, Inc., June 1997



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Continued from page 7

be developed for less than $100,000, the study notes, companies should choose intranet applications that have clear business benefits. "Not all intranet applications are created equal," the report summarizes (see story, page 7).

ON THE HORIZON

IT managers are also beginning to tackle issues that loom further down the pike. Chase Manhattan, for instance, is tinkering with the idea of granting users the right to use their IDs to create customized views of the intranet. The company is actively evaluating commercial programs that will allow them to do this, Mazza says.

WHILE SIGNIFICANT applications can be developed for less than $100K, companies should choose intranet applications that have clear business benefits.

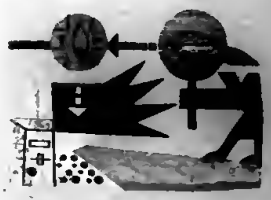
Additionally, securing corporate data, whether it rides on the intranet or is open to the extranet, is an ongoing concern, IT managers say. "You have to protect your intellectual property, whether in-house or outside the corporate firewall," National Semiconductor's Newell says.

In the meantime, however, IT managers are trying to get a handle on growing their intranets while retaining control, a task that is becoming far more significant as the intranet matures from a publishing platform to a full-fledged corporate network.

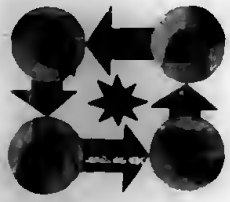
Rooney is a freelance writer in Boston

Building Tips

- **ESTABLISH A COMMON architecture and look and feel.**
- **STANDARDIZE ON intranet servers and tools to ensure synergy across the company.**
- **GET COMMERCIALLY supported products.**
- **ANTICIPATE BANDWIDTH requirements; upgrade switches; evaluate IP multicasting and ATM technologies; and get T1 lines.**



- **DESIGN NETWORK infrastructure, upgrading hardware and router software and adding servers.**
- **GENERATE "PURE" intranet applications (strictly Java or HTML) only when it makes sense, such as for real-time collaboration. Otherwise, parlay existing legacy and client/server applications.**
- **EVALUATE INTRANET management/monitoring tools.**



Product List

A sampling of key technology areas

DYNABASE DATA SERVER AND WEB MANAGER CLIENT
Inso Corp.
www.inso.com
Boston
(617) 753-8500
Web content management tools
Available: Now

HAHTSITE 3.0 APPLICATION SERVER ADMINISTRATOR
Hahtsoftware, Inc.
www.hahtsoftware.com
Raleigh, N.C.
(800) 438-4248
Available: Now

LINKBOT 3.5
Tetranet Software, Inc.
www.tetranetsoftware.com
Ottawa
Broken link finder
Available: Now

WEB TRENDS 3.5
e.g. Software, Inc.
www.egsoftware.com
Portland, Ore.
(503) 294-7025
Internet/ intranet traffic reporting and analysis
Available: Now

PROJECT: GMAC COMMERCIAL MORTGAGE CORP.

Capital Growing Pains

By Kim S. Nash

At 28, Niraj Patel is a mighty young CIO. But with two bachelor's degrees, Patel manages a mighty job at GMAC Commercial Mortgage Corp.

The Horsham, Pa.-based company itself is a youngster, having been spun out of General Motors Acceptance Corp. in 1993. And hypergrowth is on everyone's to-do list.

Patel explains it this way: "The president of the company said, 'We're going to grow another 100% this year [in sales and staff], and I don't want to hear technology held me back.' And he's right. Absolutely right."

GMAC Commercial's loan portfolio started at $2 billion in 1993 and has grown to $22 billion, due largely to several mortgage company acquisitions. The company aims to continue the pace.

To make it happen, online projects have taken center stage. An intranet that 50 users perused two years ago now supports 750 users. Another 460 outside users use a companion extranet. Even the IS staff has ballooned from two people to 35 in four years.

We asked Patel about any associated growing pains.

THE INFANT INTRANET

"We started working on intranet applications two years ago. Back then, I used to be in charge of advanced technology for the company. We were trying to use the technology to do basic things to help the business, like daily rates for mortgages. We used to fax them to every branch every morning — 35 of them. We put this [information] on the intranet right away.

"Then it started skyrocketing. All the business units started seeing the power. We put all of our policies online, such as procedures for originating a loan, capital market guidelines. The employee phone directory is always a good one for intranets. [These static publishing projects] we did for a year and half, then moved to more advanced applications."

EXTRANET FUELS INTRANET

"What drove us was the actual Internet. We have investors who invest in our securities and bonds. They want to know status and defaults and whatnot. In the old days, they would call up customer service to get this information. Some information didn't always exist, so [phone agents] would have to hunt it down. We created an interactive online web — and extranet. [Investors] log in and see their data, and it's presented in grid format so they can sort it into any order they want."

INTRANET GROWING PAINS

Roughly six months ago, "we were getting calls about slow response. But working on the extranet applications is when we saw slow, slow response. Users had to endure five-minute downloads of all the pieces necessary to use the investor query application. GMAC upgraded its server from a Compaq 500 series to a dual Pentium 600 series."

BUSINESS-CRITICAL

"Our first application, Rate Distribution, was more crucial to the lifeline of the company than all the policies and procedures we put on later. There was a dollar savings associated with not having to fax that rate data every day. Payback was less than three months."

HARDWARE, SOFTWARE

"All our users are on Windows 95 running Internet Explorer. All our servers are NT servers. For the Web server, it's Microsoft Internet Information Server. Development is being done in Visual Basic 5.0 or FrontPage+, with a lot of ActiveX components we create [and] purchase."

WHAT'S ONLINE

GOING INTERNATIONAL

"The company plans to expand internationally this year, starting with Europe. It's a challenge. We are trying to get the intranet and extranet through all the language barriers. At a minimum, we're thinking at least 13 different languages."

Nash is a Computerworld senior editor, investigative reports.

GMAC'S NIRAJ PATEL: 'We went from having one person developing and maintaining the intranet to four'

PHOTOGRAPH BY JOHN PEARLMUTTER

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The Internet

Electronic Commerce • The World Wide Web • Intranets

Briefs

Webmaster fast facts

- **80%** are IS professionals by background
- **86%** don't have final purchasing authority
- **14%** of those at large companies report to sales and marketing departments

Base: 350 IS professionals with responsibility for buying Internet products at their companies

Source: Sentry Technology Group, Westboro, Mass.

Integrated tracking

▸ Merchants' sites to show UPS parcel status

By Sharon Machlis

"We want to enable the merchants to speak directly to their customers." – Ross McCullough, UPS

WHILE MOST companies look to the World Wide Web to bring more public attention to what they are doing, United Parcel Service of America, Inc. has launched a project to make some of its electronic services less visible.

UPS is working to integrate its package-tracking capabilities directly with corporate customers' sites, according to Ross McCullough, electronic-commerce group manager at the shipping company in Mahwah, N.J. Instead of placing an order on a retailer's Web site and then jumping to UPS to track the package, consumers could get that tracking information from the site where they ordered.

Why, when conventional Web strategy is to create more links to your site and increase public traffic, is UPS moving the other way? "We want to enable the merchants to speak directly to their customers," McCullough said. By helping retailers offer more services to consumers, he said, those retailers might generate more repeat sales — and thus more shipping business for UPS.

Brielle Executive Gifts in Brielle, N.J., has discussed a pilot program with UPS that would integrate ordering and tracking data, said Duncan Van Dusen, vice president. Currently, when customers place their orders, they receive a confirmation number immediately, but there is no shipping number until inventory is ready to be sent out.

By linking the confirmation number with a shipping number when an order is first entered, customers get the information they need to track the package immediately — there is no need to check in another time for the shipping number. And the tracking information would be integrated with the retailer's site, so a user would get status information from the site where the order was placed, not from the separate UPS page.

"I think the concept is pretty elegant," Van Dusen said.

But because most of Brielle's customers order by telephone, even if they shop using the Web, "for us the issue of assigning numbers wasn't as exciting as for UPS," he said. Infrastructure is in place for a pilot, but Van Dusen said he expects a beta test will be pushed back until after Brielle's busy holiday season.

Meanwhile, the public UPS

UPS, page 45

Telecom managers want Web site voice

By Matt Hamblen
NEW YORK

WEBMASTERS AND telecommunications managers live in different worlds within large companies, but they shouldn't, according to attendees at the Communication Manager's Association meeting here this month.

"If telecom managers don't become part of this Internet world, they will become buggy

Telecom, page 45

TIME IS MONEY

At a large financial corporation, using software to save one second per call to a 500-person call center saves $150,000 per year. An average Interactive Voice Response transaction saves 27 seconds per call compared with a live attendant. That could save about $4 million per year.

Source: The Tower Group, Newton, Mass.

Networks need defense against hacker attacks

NETWORK SECURITY PHILOSOPHY

Most IS professionals want to tightly control network access and expand the use of extranets

Base: 413 IS professionals ■ Agree/strongly agree ■ Neutral ■ Disagree/strongly disagree

Source: Computer Security Institute, San Francisco; Zona Research, Inc., Redwood City, Calif.

By Laura DiDio
WASHINGTON

FOREWARNED IS forearmed.

Network invasions by external hackers are expected to increase dramatically during the next two years, and users have little chance of doing anything about them without proactive intrusion detection policies.

"If you don't have a security plan, you're in big trouble," warned Mark Pollitt, a supervisory special agent at the FBI.

Speaking at the 24th Annual Computer Security Institute Conference here last week, Pollitt noted that burgeoning use of the Internet is making formerly stand-alone networks more vulnerable to attack.

To underscore the security threat posed by the Internet, Louisville, Colo.-based Storage Technologies Corp.'s Business Group handed out white papers laden with statistics and details on the latest hacks.

Among the findings: Hacking tools, such as password guessing, war-dialing and address spoofing programs, are available to anyone surfing the Internet.

Pollitt told *Computerworld* that the FBI's "intrusion" caseload — mostly external hacks — has risen by double digits for the past three years.

"In 1994, we investigated about 500 cases; it was 2,500 in 1996, and we're estimating that we'll pursue 4,000 cases in 1998," he said.

Hacker attacks, page 47

intel inside
pentium II

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PC MAGAZINE EDITORS' CHOICE

June 10, 1997
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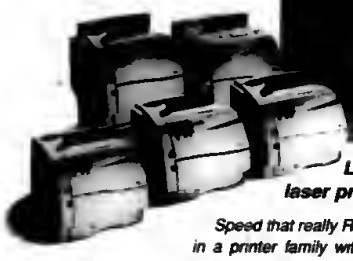

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Telecom managers want Web voice

CONTINUED FROM PAGE 41

whips," said Kathryn Hale, an analyst at Dataquest in San Jose, Calif.

"There's an integration between computers and telecom, and it's happening very quickly. What colleges call a computer science degree won't be called that in five years," Hale said.

Currently, telecommunications departments have very little to do with World Wide Web site development and site operations. But those departments have valuable experience in supporting networks and in managing customer service functions such as call centers, observers said.

WEB SITE DEVELOPMENT

Carter Lusber, an analyst at Gartner Group, Inc. in San Jose, said webmasters "do too many things," including server support, application and content development.

Some telecommunications managers said they want a bigger role in developing and operating corporate Web sites as the technological divide between voice and data continues to blur.

The managers reason, in part, that Web sites could be beefed up with useful call center and voice-response applications that depend on phone networks as all sorts of network functions come together on common platforms.

ON-CALL HELP

For example, a customer browsing a Web site could enter his phone number and, seconds later, get a voice phone call offering help from a customer service representative.

"Anywhere there are sales going on, the telecom department should be directly involved," said Jack Reed, a systems engineer at Grumman Systems Support Corp. in Longmont, Colo. Reed now supports a call center and will be adding a Web site.

"It makes sense for the telecom department to administer a Web site," said Peter Gunn, a telecommunications engineer at United Parcel Service of America, Inc. in Mahwah, N.J.

Publisher and venture capitalist Harry Newton, who spoke at the meeting, said, "A company's Web site belongs in the telecom department, not IS." Newton said telecom departments have more experience servicing external customers and can fulfill that function better than other groups.

No matter who controls them, call centers and other phone applications need to be "closely coordinated" with Web site administration, said Wayne Guymon, chief information officer for benefits administration at Towers Perrin in New York. Towers Perrin provides call center support to outside clients.

The worst that could happen is for a customer to call an Interactive Voice Response system and get different information on his accounts from what is available on the Web site, Guymon said. □

Sites embed UPS

CONTINUED FROM PAGE 41

package-tracking Web site is also gearing up for its peak season. UPS is still promoting its own Web site to the public, including deals earlier this year with search engines from Yahoo, Inc., Lycos, Inc. and Infoseek Corp. The site has an average of 115,000 tracking requests and 2.5 million hits per day. The company expects that its site will handle 4.7 million tracking requests next month. "Infrastructure is being beefed up," McCullough said. The site's capacity has been doubled twice this year. □

ADVERTISEMENT

Managing Re-Systemization

How U S WEST Dex moved from a mainframe to a distributed environment with PATROL

U S WEST Dex, one of many U S WEST companies, sells Yellow Pages advertising, related mailing lists and other products that are derived from telephone directories. In all, they publish over 300 directories with over 42 million printed copies.

Handling all of this publishing and taking care of nearly half a million USA and international clients calls for complete distribution of data 24 hours a day. All of the company's critical applications must be available to thousands of users.

The original mainframe needed upgrading and the decision was made by U S WEST Dex management to move to a distributed environment. Over a period of many months, operational processes were decreased on the mainframe and increased on the distributed systems.

U S WEST Dex created a new group called the "System Management Center" (SMC) to recommend products to help them ease and manage the transition. As interaction with the SMC progressed over a couple of months, one partner relationship between two vendors stood out, that of Hewlett-Packard and BMC Software.

"We found that the partner relationship between these two companies was able to satisfy a broad range of our needs. The joint presentation of their individual products tended to complement and even strengthen each other. We saw clear advantages to both vendors working with us as a single team rather than separately. We awarded them our contract jointly and plan to order more later this year," explains Project Manager Henry Vargas of U S WEST Dex.

"Our business-critical applications have been re-architected into the client/server model to help give us a competitive advantage. We use the Hewlett-Packard systems due to their mission-critical capabilities, high performance and the ability of Hewlett-Packard and BMC Software to put together a solution."

These products will provide U S WEST Dex with the ability to collect information from their new distributed computing environment and process it to report the status of individual elements within their IT environment. They will be able to graphically show the current status of all elements of their enterprise, including networks, systems, applications and databases, and manage them through one console. They should realize a seamless, easy transition of critical systems with reduced user downtime.

"We are pleased to be working with BMC Software on this project," said Business Development Manager Travis Muesing, of Hewlett-Packard. "We have worked with them before and have always felt that our products, services, support and education complement each other. Together, we can always provide our customers with a complete, timely and cost-effective solution to their integrated network and system management needs."

U S WEST Dex plans to incorporate more of the Hewlett-Packard and BMC Software products to provide additional support for IT operations, performance monitoring and IT administration.

"HP *is reselling PATROL® technology and products because of the tight integration BMC Software is delivering through the HP OpenView enterprise solutions. Together, HP OpenView and PATROL provide the highly desired complementary functionality that our customers need today in the areas of application and data management.*"

Johnnie-Mike Irving, General Manager HP Professional Services Organization for the Americas

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Chill out.

Virgin Group eyes Internet role

By Ron Condon
LONDON

THE VIRGIN GROUP is set to start using the Internet as a channel for its range of businesses, from music retailing to trans-Atlantic travel and retirement pensions.

Company Chairman Richard Branson said last week that he soon will launch an Internet-based music service and book shop. "The electronic-commerce revolution is just around the corner, and it will change the way Virgin operates," Branson said. Both of the new online stores will go live early next year, he said.

Branson said that if Internet commerce is to succeed, it will provide an enhanced experience or offer something extra that physical stores can't match. In the case of the online music store, he said, he plans to let users download just the tracks they want. "You could put Oasis, Tom Jones and Pavarotti onto a single CD if that's what you want," he said.

Virgin also plans a Virgin shopping mall early next year and will extend the Virgin Direct Bank (which now operates in a limited form by telephone) to run over the Internet.

Virgin launched an Internet service, Virgin.net, last November. According to Virgin.net Managing Director David Clarke, it now has 80,000 users and that figure is rising by 2,000 users per week.

Clarke said Virgin is also considering marketing a low-cost Internet set-top box. "If you need a PC costing 1,000 pounds ($1,600) to get on to the Internet, then that will exclude a lot of people," Clarke said. "The device we are looking at will need a local hard disk and will have to cost less than 200 pounds [$320]."

Branson said successful Internet selling has to deliver lower prices as well as provide an enhanced experience. "If you sell over the 'net, you have more money to play with," he said. □

Condon writes for the IDG News Service in London.

Hacker attacks

CONTINUED FROM PAGE 41

Complicating matters for the FBI's 10,000 agents and the corporate victims alike is that there is a lot more data to hack, Pollitt said.

"Four years ago, the average computer had 500M bytes. Today, the average system hard drive is 2G bytes, and we're talking terabytes of data for network servers and mainframes," Pollitt said.

He outlined three basic tenets for securing data: finding it, saving it and preserving it.

Then he advised users to check for "who, what, when, where, how and why." That simple checklist will help companies determine if they have the resources in place to secure their corporate data, Pollitt said.

One security manager in attendance said the Midwest insurance company he works at found that out the hard way. The manager, who requested anonymity, was hired 18 months ago, but only after the company's network was hacked and some of its data destroyed by a computer virus.

"Before that, the company never really gave security a thought. It was just an invisible item. And because we were lax, we never caught the individuals responsible," the manager said.

Sixteen users interviewed by *Computerworld* claimed not to have experienced any hack attacks. Many, such as Michael Stonkey, security manager at GRC International, Inc. in Vienna, Va., attributed that to the fact "that we're not set up for corporatewide Internet access yet." □

ADVERTISEMENT

From Desktop to Enterprise

Leaders in I/O Technology

The demand for device driver portability between operating systems and host platforms, combined with increasing requirements for intelligent, distributed I/O processing has led to the development of the Intelligent Input/Output, or I_2O specification. BMC Software and Intel Corp. are working closely with the I_2O Special Interest Group (SIG) to bring I_2O-compliant technologies to market, including integrating PATROL Management solutions with the Intel i960RP I/O processor.

"The importance that the Intel/BMC relationship brings to the market is that BMC innovation in I/O technology naturally makes them a leader in this collective new I/O-centric industry," states Alan Steinberg, Director of New Business Development, Connected P.C. Division at Intel. "Currently we have companies coming in from the desktop and from other areas of the industry that don't necessarily have the Enterprise experience BMC Software has to deal with the type of I/O that is needed in what could be called the new 'open mainframe' world."

Steinberg envisions a world where Microsoft will provide the main operating system, Intel will provide the hardware architecture and BMC Software will contribute the key I_2O-compliant management technology. BMC Software's role will be to help architect what Steinberg calls the "highly available, highly manageable open system mainframe" on the I/O space.

Bob Beauchamp, Vice President of Strategic Marketing and Corporate Development for BMC Software, agrees. "The pervasiveness of the i960 chip in the Windows NT and NetWare environments, combined with BMC Software's PATROL technology, will empower customers with unprecedented management and monitoring capabilities from the application to the motherboard."

Clearly, the ability to gather statistics regarding I/O is a great step forward. The PATROL Application Management Suite completes the picture by correlating I/O statistics with the applications that are utilizing the I_2O components or sub-system. This allows unprecedented optimization capabilities, such as automated load balancing, cache reallocation, and the rerouting of network traffic. All of these capabilities can be performed on demand and are based on the performance requirements of the applications.

Currently, no two vendors come as close as Intel and BMC Software in providing this comprehensive approach to I/O processing and manageability.

"We've moved into a new paradigm where I/O is as important as the central CPU technology," states Steinberg. "This shift will allow BMC to proliferate its management product line in the open systems environment. Pairing Intel I/O technology with PATROL is just the very beginning. It's the first product of many, as this new I/O-centered technology emerges into the marketplace, and we think it's going to be an exciting ride."

Intel

Corp. is integrating PATROL® management technology into the i960RP® I/O processor in order to provide the direct management capabilities for I/O subsystems customers are asking for.

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TeamSAP. Because it's not just what you know, it's also who you know. A total enterprise software solution is only as effective as the support that comes with it. Recognizing this, SAP has launched a new initiative called TeamSAP.™ It's a coordinated network of people, processes, and products that defines the commitment needed to achieve the successful implementation of R/3™ software. With TeamSAP, you can be certain you'll get the fastest, most efficient ways to create a solution for your business. And, since TeamSAP places SAP in the role of coach throughout the life cycle of your R/3 investment, you can feel confident knowing we will be there to support you every step of the way to assure successful results. For more information about TeamSAP, visit us at http://www.sap.com or call 1-888-TeamSAP.

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NEW PRODUCTS

ELOQUENT, INC. has announced Presenter 3.0, Web-based software that enables on-demand customized presentations that include streaming video and audio.

According to the San Mateo, Calif., company, the software streams digital video and audio of speakers giving presentations with slides, audio transcripts, software demonstrations or whiteboard sessions. It includes a streaming video server that can support hundreds of simultaneous users and an embedded text search engine. The client player is a browser plug-in offered free on Eloquent's World Wide Web site.

A 10-stream Presenter server costs $12,000.

Eloquent
(650) 294-6500
www.eloquent.com

COMAXIS TECHNOLOGY has announced CCAccess, a migration tool for users of Lotus Development Corp.'s CC:Mail.

According to the Seattle company, the tool converts CC:Mail messages and attached files kept in archives to several electronic-mail formats, including Lotus Import/Export, Microsoft Corp.'s Exchange, Hypertext Markup Language- and Post Office Protocol 3-compliant systems. Groups of archives may be searched with the conversion applying only to messages matching search criteria.

Pricing starts at $295 for a 50-user license.

ComAxis Technology
(206) 367-3885
www.comaxis.com

THREE D GRAPHICS has announced Perspective JavaChart, a program for World Wide Web page developers that creates charts from any data in a Java environment.

According to the Los Angeles company, the charting program is a Java Class Library, a JavaBean and an applet. It includes a gallery of chart types, including bar, line, area, pie, radar, polar, bubble and histogram. The data-driven charts link with data in Hypertext Markup Language, text files and Common Gateway Interface scripts. The product is compatible with Microsoft Corp.'s J++, Symantec Corp.'s Visual Cafe and SunSoft, Inc.'s Java Development Kit.

The program costs $995 per server for executable code.

Three D Graphics
(310) 553-3313
www.threedgraphics.com

NETWORK SOFTWARE ASSOCIATES, INC. has announced Report.Web Server Version 2.0, software for intranet distribution of legacy host reports.

According to the Arlington, Va., company, the software combines file conversion with an administrative interface to control report publishing and distribution.

One report can be produced in Hypertext Markup Language as an Excel spreadsheet or as a .PRF file. The end-user interface lets users sort reports by folder, date or report name.

The product costs $12,995.

Network Software Associates
(703) 875-0444
www.nsainc.com

MUSTANG SOFTWARE, INC. has announced the FileCenter File Library System, software that manages the process of submitting, posting and locating files on Internet and intranet sites.

According to the Bakersfield, Calif., company, the software stores World Wide Web site file information, including file name, description, author, location and complete text, in an online database for searches by Internet users.

When file creators upload files over the Web, FileCenter posts the files, updates the new submission list and creates the Hypertext Markup Language code needed to permit viewing the index through a browser.

FileCenter costs $999.

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Advertisement

Smooth Transitions

Louis Poulsen & Co. smoothes their transition to SAP R/3 and open systems with PATROL

Denmark's Louis Poulsen & Co. A/S is known internationally as the manufacturer of the world-famous PH lamps, and as sellers of electrical appliances. Louis Poulsen has its production wing based in Denmark, but sales and distribution offices are spread around the world on four continents. Consequently, it is a company with simultaneous requirements for advanced production management, effective logistics, and continuous budget control across a geographically distributed environment.

To more effectively meet these requirements, Louis Poulsen decided to move their IT operations from an IBM mainframe system to an SAP R/3 solution running on IBM RS/6000 hardware with the Informix RDBMS.

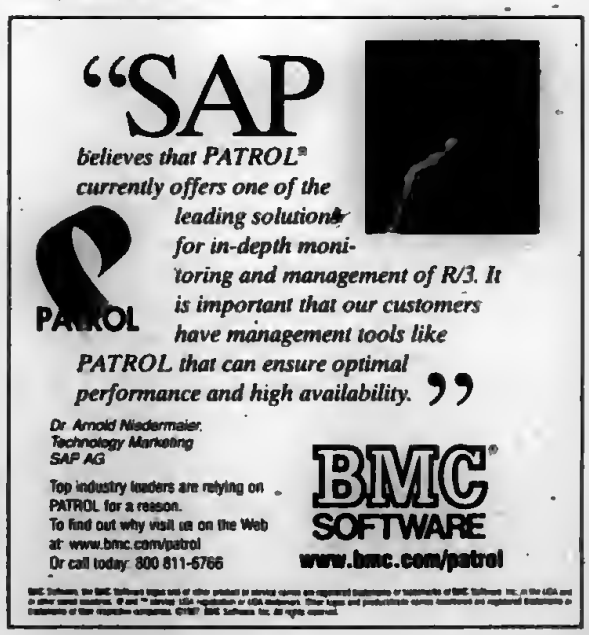
The benefit is obvious when the entire system is running smoothly – no matter where in the world requests come from, everyone receives up-to-date and exact information. However, when things are not running smoothly, the problems are also obvious.

Louis Poulsen realized they could more effectively utilize client/server solutions if they made automated management part of their overall management strategy. Their first step was to introduce the IBM NetView product for management of their network environment. The next step was to incorporate automated application and database management through the PATROL® Management Suite of products from BMC Software.

Peter Jacobsen, manager of IT operations states that, "without a doubt, automated monitoring of the Informix database, especially the PATROL features that help ensure log files do not overflow, has helped avoid a number of situations that would otherwise have resulted in an outage."

When BMC Software announced in 1996 a PATROL Knowledge Module that would proactively manage SAP R/3, it was an easy decision for Louis Poulsen to trial the product. "SAP R/3 comes with a systems management tool called CCMS," says Jacobsen, "but to use it you need manual interaction. PATROL gave us the ability to automatically monitor relevant R/3 parameters and, at the same time, have information about them presented to us in context with other information from PATROL about our databases and platforms. With PATROL, we get a complete overview about how our application environment is operating."

Through PATROL, Louis Poulsen learned of a number of important parameters in their application environment that could be monitored and tuned to support higher application availability and improve performance – parameters they didn't even know the existence of before PATROL. Now, at any time, they have instant access to this important information. Says Jacobsen, "With PATROL, we have a tool that allows us to drill deep into our systems, applications and databases for information. Plus, PATROL lets us know if changes we are making in one area of our environment will have a negative impact on other areas. There are still many things we have to learn about PATROL, but we definitely know it is necessary for future management and tuning of the system as well as our insurance for keeping up with the end users' demands for availability."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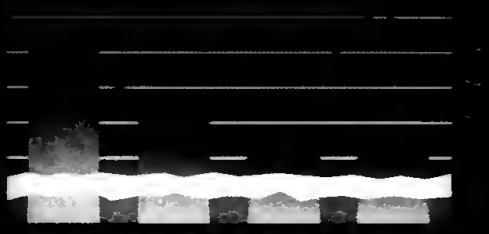
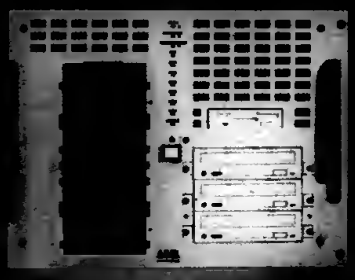
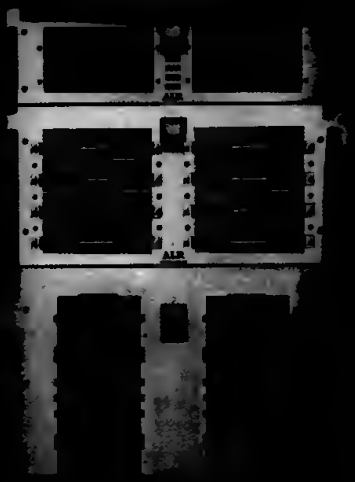


You want to see real power? Forget about unpredictable winter weather patterns and focus your satellites on the ALR Revolution 6X6. As the first MP Spec compatible system to boast the power of six Pentium Pro processors, this server powerhouse is taking the Enterprise Computing world by storm.

In fact, storm might be too mild a word. An ALR Revolution 6X6 running Microsoft SQL Server 6.5 Enterprise Edition recently





tpmC

tpmC

clocked in at 13,089 30tpmC the highest TPC-C score ever recorded by an Intel© based server. More remarkably, this same system set a new price/performance standard with a phenomenally low cost of only $35.11 per tpmC. So now, the most powerful server is also your best server buy.

Factor in the Revolution 6X6's many high availability features and built-in server

Protecting the [illegible] hard. But [illegible] powerful Intel [illegible] Enterprise Servers [illegible]. Just visit your local ALR [illegible]. For the one nearest you, call our toll free number [illegible]

ALR

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PCComputing

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IMATION

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The Enterprise Network

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Briefs

Fingerprint ID kits

The U.S. Department of Commerce recently granted I/O Software, Inc. in Riverside, Calif., permission to export Sony Corp.'s Fingerprint Identification Unit (FIU) and its software applications with 56- and 128-bit strong encryption capabilities.

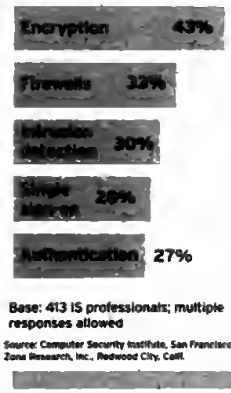
Sony FIU is suitable for secure data exchange in applications such as financial records, smart-card transactions and electronic-mail transmissions. The unit can store up to 1,000 fingerprint templates and is linked to the host computer via an encrypted serial card. It is available now; pricing depends on configuration.

Comsat antenna links

Comsat Corp. in Washington announced Link One, a satellite communications technology that will incorporate Asynchronous Transfer Mode, frame relay, Signaling System 7 and Integrated Services Digital Network technologies in one platform using satellite antennas. The company is beginning beta trials, and Link One should be available commercially in the middle of next year. Small dish antennas of 2.4 meters in diameter will support data rates of up to 2M bit/sec., and 11-meter antennas will support 32M bit/sec. data rates.

SECURITY PURCHASES

Which security technology do you plan to buy in the next 12 months?



Base: 413 IS professionals; multiple responses allowed

Source: Computer Security Institute, San Francisco; Zona Research, Inc., Redwood City, Calif.

MARC ALCOBIZ

Airline's network on standby

By Patrick Dryden

DURING THE busiest travel weekend of the year, airlines can lose business if network problems make their customers late for Thanksgiving dinner.

Southwest Airlines is taking advantage of the annual peak in customer traffic to look for bottlenecks in its next-generation network. The information systems group is preparing for a more gradual journey: the migration of all essential business traffic from the legacy multiprotocol network to a routed TCP/IP network.

Network managers will analyze the performance of the new wide-area network while airport check-in stations are most active, even though the WAN is handling mostly operational traffic so far. Competition demands that Southwest keep passenger waits brief every day. So eventually the frame-relay WAN will take over passenger reservations and updates.

WIDE-AREA NETWORKS

"We're known for fast boarding and quick turnaround of planes, which keeps our fares low," said Chris Coons, manager of network services at Southwest in Dallas.

Ideally, planes should spend no more than 20 minutes on the ground, where they can't earn revenue and serve customers. "That means we don't have as much time to wait to restore our network as other airlines," Coons said. "We must get people from the counter on-

Southwest, page 55

E-mail getting a scan from server

▸ *Several products seek viruses before users open their mail*

By Barb Cole-Gomolski

E-MAIL VIRUS SCANNING

Pros:

- Prevents end users from spreading viruses via E-mail
- Scans attachments, even in compressed formats

Cons:

- When used on the desktop, it adds another application that must be updated and managed by IS
- Users can disable client-side virus scanners

ELECTRONIC-MAIL administrators trying to stop E-mail-borne viruses before they get the chance to spread are turning to server-based software that scans incoming mail for suspicious attachments.

"If there is a virus in an E-mail attachment, it is zapped before it gets to the end user's desk," said Scott Steen, network administrator at Mastering Computers, Inc., a high-tech training company in Scottsdale, Ariz.

For the past several months, Steen has been beta-testing GroupShield for Exchange from McAfee Associates, Inc. in Santa Clara, Calif. GroupShield is a server-based virus scanning package that checks E-mail and attachments before Microsoft Corp. Exchange users have a chance to open them.

The product, which shipped earlier this month, is one of several that recently hit the market (see story, page 55).

McAfee also makes a version of GroupShield for Lotus Notes.

Detecting viruses before they reach the desktop frees information systems managers from having to depend on end users to keep virus scanning software up to date or even running.

It also prevents users from inadvertently infecting other machines inside and outside the company.

Virus scanning, page 55

Teleworkers seek faster connections

By Matt Hamblen
NEW YORK

WORKERS WHO telecommute or work remotely are thirsting for faster modem connections to the office and the Internet.

The problem is finding a company to provide the service.

"The phone companies need to hurry up to provide ADSL," said analyst Shizue Shimbo Davis at Walsh-Lowe and Associates, Inc., a telecommunications consultancy in Hoboken, N.J., in a speech to network managers at the Communications Managers Association fall meeting here recently.

Teleworkers, page 57

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Virus scanning on the server

CONTINUED FROM PAGE 53

Most large corporations load some kind of desktop virus scanning software, but "some end users will disable it," said Mark Levitt, an analyst at International Data Corp. in Framingham, Mass. Levitt said that is reason enough to invest in messaging-server-based virus scanning software.

INFECTIONS ON THE RISE

A survey done earlier this year by the National Computer Security Association found that the monthly rate of virus infection on corporate networks has nearly tripled in the past year — to 33 PCs per 1,000 from 10 PCs per 1,000.

The survey also found that E-mail is now the leading method of transmission. Macro viruses, which are activated when Microsoft Word documents are opened, represented 80% of all infections, the survey showed. That figure is up from 49% last year, the survey showed.

Mark Schmidt, IS director at Heritage Broadcasting Group, which operates television stations in Tustin, Mich., agreed that server-based virus scanners are advantageous. "It saves a lot of administration," he said. And unlike desktop virus scanners, the server-based virus scanner he runs atop Exchange doesn't affect performance, he said. Schmidt said he uses ScanMail for Exchange from Cupertino, Calif.-based Trend Micro, Inc.

Joyce Graff, an analyst at Gartner Group, Inc. in Stamford, Conn., said if companies don't want to invest in E-mail virus scanning, they at least need a desktop product that will automatically scan attachments before they are opened.

Steen said he will use GroupScan for Exchange to periodically search users' mailboxes for viruses. He will hold off installing a companion product — a desktop virus scanner called GroupScan for Microsoft Exchange — because he said he doesn't want the hassle of having to manage another desktop application.

Levitt said that in a recent survey of 180 IS managers, virus scanning was ranked as the most important feature in products that primarily provide E-mail, even though none of the popular mail systems have it. □

Scanning the virus products

Several products detect viruses on leading messaging systems.

The Cheyenne Software division of Computer Associates International, Inc. in Islandia, N.Y., sells agents for Lotus Notes and Microsoft Exchange that work with its InocuLAN virus scanning software. Each agent costs $695. The company also offers Protection Suite for Novell, Inc.'s GroupWise, which handles backup and virus scanning, for $1,395.

In addition to GroupShield and GroupScan for Microsoft Exchange, McAfee Associates also sells GroupShield for Lotus Notes for $25 per user for licenses of between 500 and 1,000. Cupertino, Calif.-based Symantec Corp. plans to ship Norton AntiVirus for Lotus Notes by year's end for $795 for a 25-user server license.

Dr. Solomon's Software, Inc. in Burlington, Mass., offers Anti-Virus for Lotus Notes for scanning E-mail messages and attachments and plans to ship a version for Exchange by year's end. It costs less than $1,000 for 10 users.

Trend Micro plans to ship ScanMail for Microsoft Exchange next month. Pricing is $990 for 50 users. — Barb Cole-Gomolski

SHORT

95/NT configuration

Pinnacle Technology, Inc. in Indianapolis last week released a version of its Desktop Commander configuration and administration software package for Windows 95 and Windows NT. Desktop Commander lets administrators automate the process of creating user profiles — including for remote users — from a central management console. It is available now and costs $79 per client.

Southwest

CONTINUED FROM PAGE 53

to the plane — not just during Thanksgiving, but all year."

The added flights and full planes during the holiday "magnify the importance of keeping the check-in stations operational," said Rod Stallings, director of computer and network services.

But the WAN that will take over all critical business tasks is in its "infancy phase," Stallings said.

GRADUAL CONVERSION

Right now, the WAN carries traffic from electronic mail, accounting, procurement and other operational applications, Stallings said. It links the check-in stations at 51 airports, nine reservations centers, headquarters and 20 other sites. Next year, the reservations system will be converted to rely on it as well.

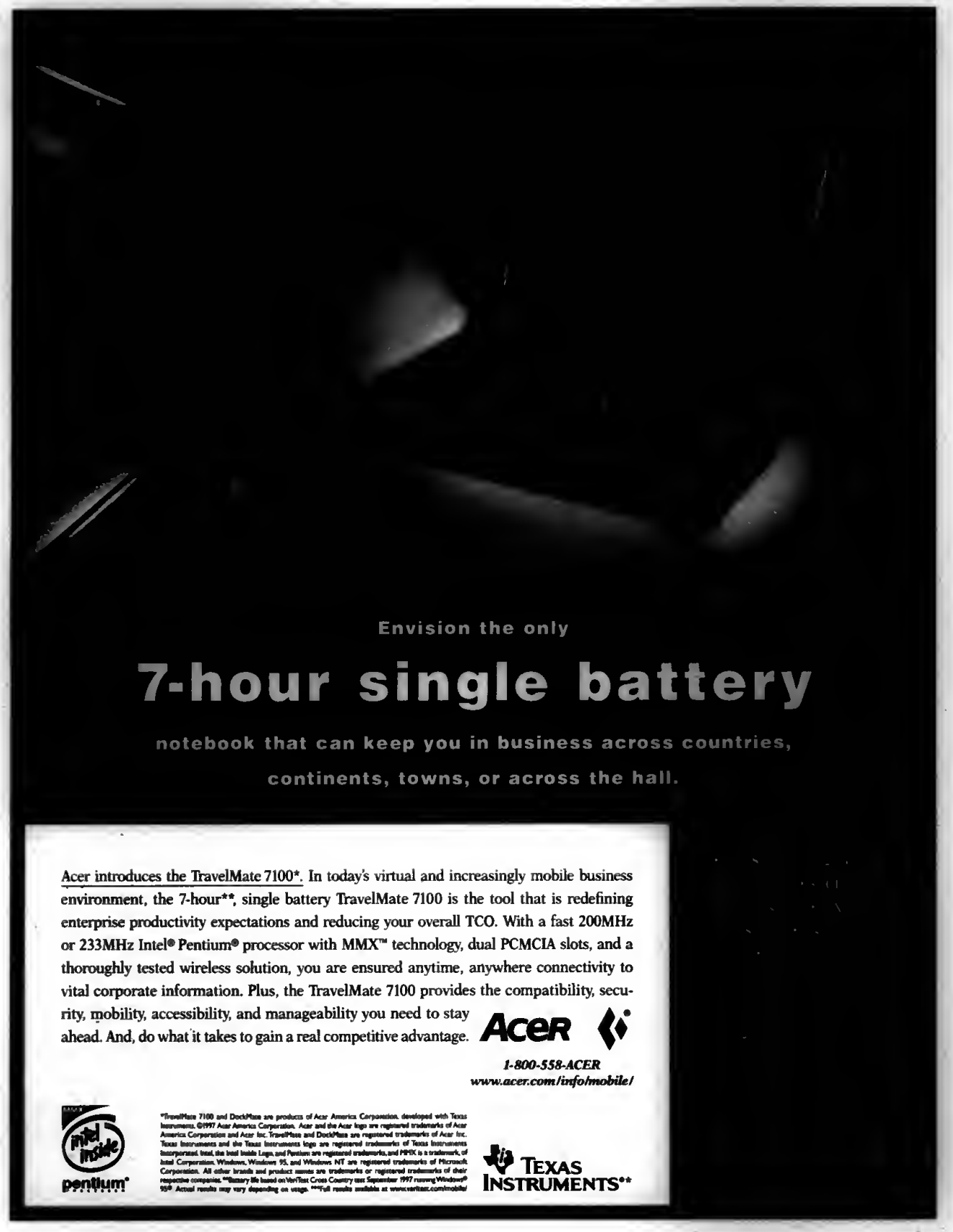
Operators watch this network with OpenView Network Node Manager from Hewlett-Packard Co. to detect failures. They use CiscoWorks from Cisco Systems, Inc. to manage routers.

But to plan for future traffic demands, Southwest analyzes performance with Network Health reporting software from Concord Communications, Inc. in Marlboro, Mass.

"We used to be in the dark about network loads, but now we can see traffic ramp up over weeks and determine if a problem is imminent," Coons said.

Network activity should rise about 20% this week, so adding those statistics to the Network Health performance history should help managers prepare for next year's migration. But they still expect surprises when the time comes.

"You can't predict the impact of new applications until they actually start to be used," Coons said. □



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intel inside pentium

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Texas Instruments**

Teleworkers seek speed

CONTINUED FROM PAGE 53

Asymmetric Digital Subscriber Line (ADSL) technology is one of several types of DSL technologies that offer faster bandwidth over a network; allow use of existing twisted-pair copper telephone lines for transmission; and don't require repeater devices to enhance performance. ADSL has been in development since 1993 but is only now beginning to be offered commercially on the West Coast by Pacific Bell in San Francisco. GTE Communications Corp. also announced deployment to residential users in Southern California beginning last week.

Many of the major telephone companies and Internet service providers have trials of ADSL under way, but the Bell companies have projected that fewer than a half-million digital subscriber lines will be installed by year's end. Even so, that number will swell to about 1.5 million by 2000, Davis said.

That won't be too soon for some users, who have put off upgrading their current connections because the options are too limited.

"I have postponed getting an ISDN [Integrated Services Digital Network] connection for my work at home because it is not fast enough for downloading big files on the Web," said Gaston Best, a network manager at Travelers Property Casualty in Hartford, Conn.

Best said he often must work at home and is frustrated by traditional service, so he downloads files to his laptop at work using his fast central office T1 connection. Then he carts the laptop home.

ISDN is widely available in U.S. homes and businesses, but it can take months to get the service. Bell Atlantic Corp., Best's home carrier, is testing ADSL and promoting ISDN heavily. Cable companies are slowly beginning to promote cable modems as an alternative. With data rates downstream of up to 30M bit/sec., cable's bandwidth is attractive, and cable companies are increasingly touting it for telecommuters and remote workers, analysts said.

The installed base of cable modems should jump from less than 500,000 this year to more than 2 million in 2000, Davis said. But some network managers said they are skeptical of buying Internet service from a cable company because many cable companies are short on cash and might not provide the adequate infrastructure if usage grew.

"Nobody trusts the cable company. But the phone works most of the time, and you tend to trust the phone company," said David E. Rosenstein, a network engineer at Rockefeller Group Telecommunications Services, Inc. in New York. □

AT&T unveils service, guarantee of 99.7% network availability

By Marc Ferranti
LAS VEGAS

AT&T CORP. last week unveiled its WorldNet Virtual Private Network Service (VPNS), based on its IP backbone and featuring a guarantee designed to give users nearly 100% network availability.

The service will let network managers offer end users dedicated or remote access to corporate LANs, frame-relay networks, intranets and extranets, said Kathleen Earley, vice president of AT&T Networked Commerce Services.

AT&T has been slow off the mark in leveraging its infrastructure for corporate data users, analysts said.

"Like the Smiths trying to keep up with the Joneses, AT&T is aggressively trying to make a name for itself in the business market, following the early lead of MCI," according to a report issued last week by Zona Research, Inc. in Redwood City, Calif.

But with the great demand for network reliability, speed and security improvements, the market for guaranteed network services such as VPNS is ripening, Zona said.

So even if AT&T is late to recognize where its core advantage lies — the network — it still can use its infrastructure advantage, Zona said.

AT&T WorldNet VPNS also will let businesses give clients, suppliers and business partners access to portions of their corporate databases. Companies can use AT&T's service to interconnect disparate networks using IP links.

WorldNet VPNS users can off-load as many of their network management tasks to AT&T as they want, Earley said.

The WorldNet VPNS was designed to provide 99.7% network availability, letting AT&T offer a guarantee when the service becomes generally available next year. If a customer reports that his AT&T WorldNet VPNS dedicated access connection was down for 10 minutes or more during any single day, AT&T will credit the customer for 5% of his monthly connection charge up to a maximum of 25% in one month, Earley said. The annual maximum credit will be one full month of service.

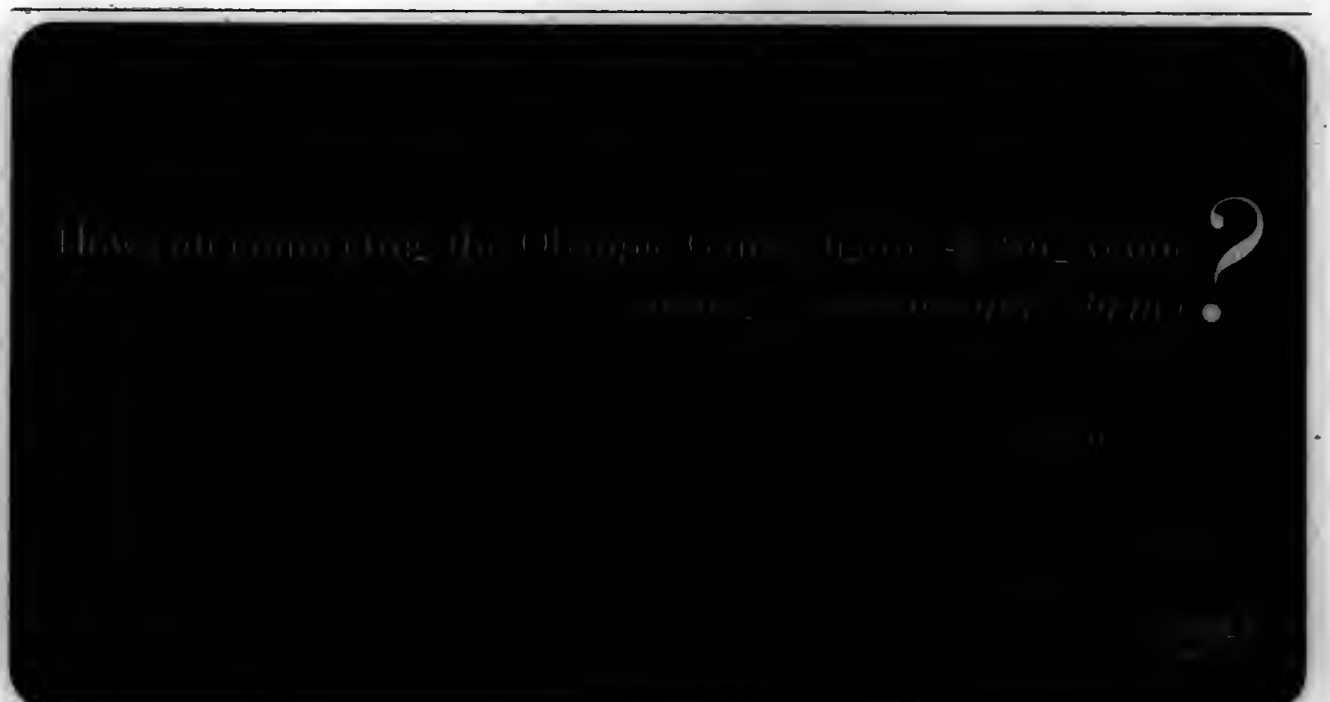
For customers who buy AT&T's optional managed router service, the guarantee will cover the total AT&T IP backbone, the access router and the local access service that connects the customer's premises to AT&T.

WorldNet VPNS offers the following:

- Dial-up access in the U.S. from more than 300 local points of presence or via a toll-free telephone service.
- Dedicated access via AT&T's frame-relay service, which links corporate LANs to the AT&T IP backbone from more than 580 central offices. Links via private lines are slated to be available by next March.

WorldNet VPNS is available now to a limited number of users. □

Ferranti writes for the IDG News Service in New York.



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NEW PRODUCTS

LANART CORP. has announced the latest version of its SegWay Adaptive Micro-segmentable Hub.

According to the Needham, Mass., company, the hub now will let users monitor and configure it via the World Wide Web. The new version includes improved security and the ability to save configuration parameter histories. It breaks networks into eight segments and automates bandwidth allocation by moving users among segments to maintain a balanced load. With 10M bit/sec. for each segment, it provides a total bandwidth of 80M bit/sec.

Pricing starts at $60 per port.

LANart
(800) 292-1994
www.lanart.com

NETWORK INSTRUMENTS LLC has announced Observer 4.5, troubleshooting software for 32-bit Windows 95 and Windows NT-based networks.

According to the Minneapolis company, the software lets users graphically map all TCP/IP, IPX and NetBIOS/NetBEUI stations; monitor bandwidth utilization; and set alarms for problem notification. The new version provides Ethernet error tracking on a station-by-station basis by receiving error packets and reporting their sources.

Observer 4.5 costs $695.

Network Instruments
(612) 932-9899
www.netinst.com

ZNYX CORP. has announced RainCluster, a Peripheral Component Interconnect-based multichannel network adapter with software for fail-over protection and load balancing.

According to the Fremont, Calif., company, when one of RainCluster's 10/100 Fast Ethernet channels fails, its software and on-board Intel Corp. RISC processor reroute traffic to other available channels. The product works with Unix, Windows NT and Mac OS systems and is available in two- or four-channel configurations. By incrementally adding 200M bit/sec. Fast Ethernet channels, it can provide total bandwidth of up to 800M bit/sec.

Pricing starts at $2,499.

ZNYX
(510) 249-0800
www.znyx.com

SYSTEMS AND SYNCHRONOUS, INC. has announced LANSleuth 3.21, Windows-based network management software.

According to the Aurora, Ill., company, the software monitors network users and tracks their errors, which servers they are accessing and what they are sending and to whom. It can monitor networks by segment and test TCP/IP network connectivity. It supports IP, IPX and AppleTalk protocols in Ethernet environments and SNA PU 2.0 in Token Ring environments.

LANSleuth 3.21 costs $489.

Systems and Synchronous
(630) 585-0225
www.ssi.com

INFORMATION SYSTEMS MANAGER, INC. has announced PerfMan 2.0, a performance analysis tool for Windows NT networks.

According to the Bethlehem, Pa., company, the tool is meant to complement Microsoft Corp.'s Performance Monitor. It can monitor more than 5,000 Windows NT servers and workstations and report exception conditions in a network or alert users to potential capacity problems. Monitored systems don't require a software agent.

Pricing starts at $995 for a license covering five managed systems.

Information Systems Manager
(610) 865-0300
www.infosysman.com

AMBICOM, INC. has announced the AMB8100, a Fast Ethernet CardBus PC card for mobile users.

According to the Santa Clara, Calif., company, the PC card is guaranteed to be compatible with all CardBus-equipped notebook computers and desktop CardBus bridges. It combines 32-bit operation with 10/100M bit/sec. speed. It includes the drivers needed to work with the operating systems Windows 95, Windows NT, Windows for Workgroups, Novell Inc.'s NetWare and Artisoft, Inc.'s LANtastic.

The AMB8100 costs $159.

AmbiCom
(408) 727-6877
www.ambicom.com

AIFP, INC. has announced Messaging Connector for Microsoft Exchange, software that lets users send, receive and manage faxes from within Messaging Application Programming Interface-compliant electronic-mail packages.

According to the Portland, Ore., company, the software integrates with Microsoft Corp.'s Exchange Server to enable the sending of fax and E-mail messages, including attachments, from inside Windows applications such as PageMaker, Word and Excel. Users also can receive inbound faxes at their desktop in the same way they receive inbound E-mail and can route, forward, print and copy them to another folder.

Messaging Connector costs $5,995 for an unlimited site license.

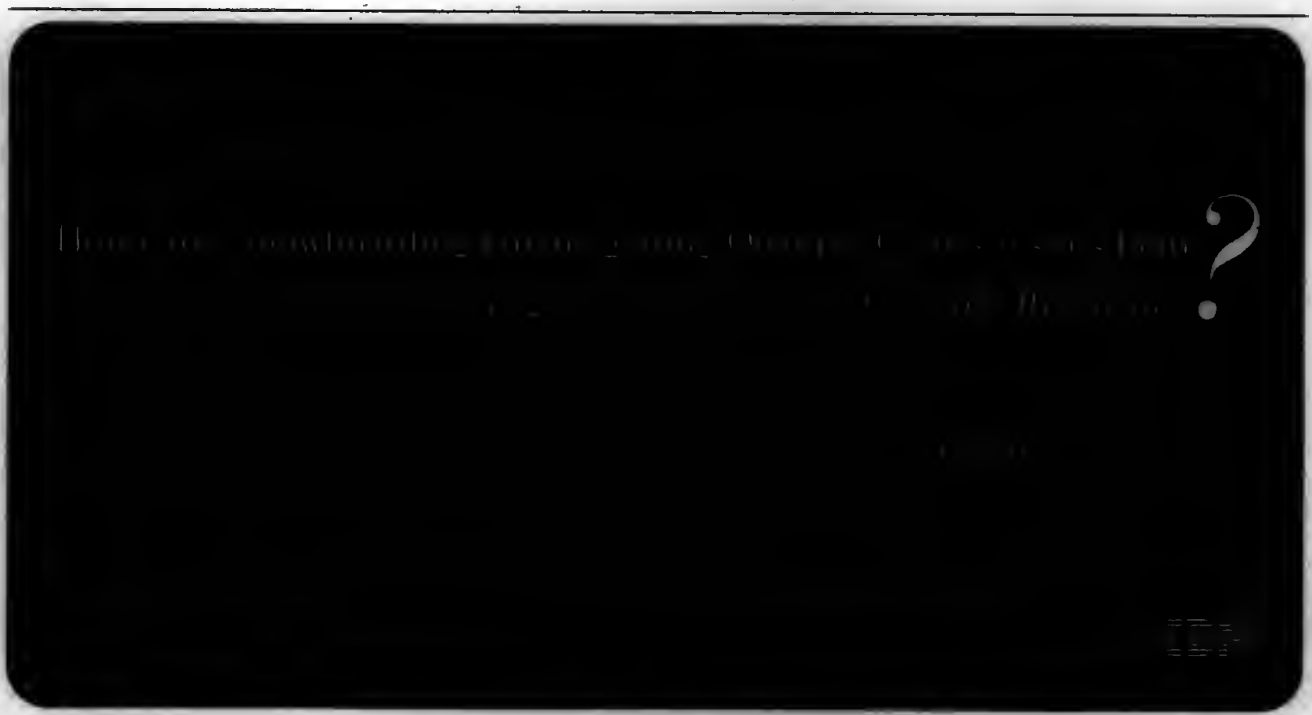
AIFP
(800) 600-4329
www.aifp.com

GENEVA SOFTWARE has announced Alert-Page Enterprise 4.0 for monitoring cross-platform networks from a Windows 95 or Windows NT workstation.

According to the Northbrook, Ill., company, devices that can be monitored include NetWare servers from Novell, Inc., Windows NT servers, World Wide Web servers, Unix hosts, workstations, hubs, routers and Simple Network Management Protocol-enabled devices. A suite of Hypertext Markup Language-based management reports lets users monitor Web services, network file systems, Simple Mail Transport Protocol electronic-mail programs and databases from a Web browser.

Pricing per service device is $695.

Geneva Software
(847) 562-0012
www.genevasoft.com



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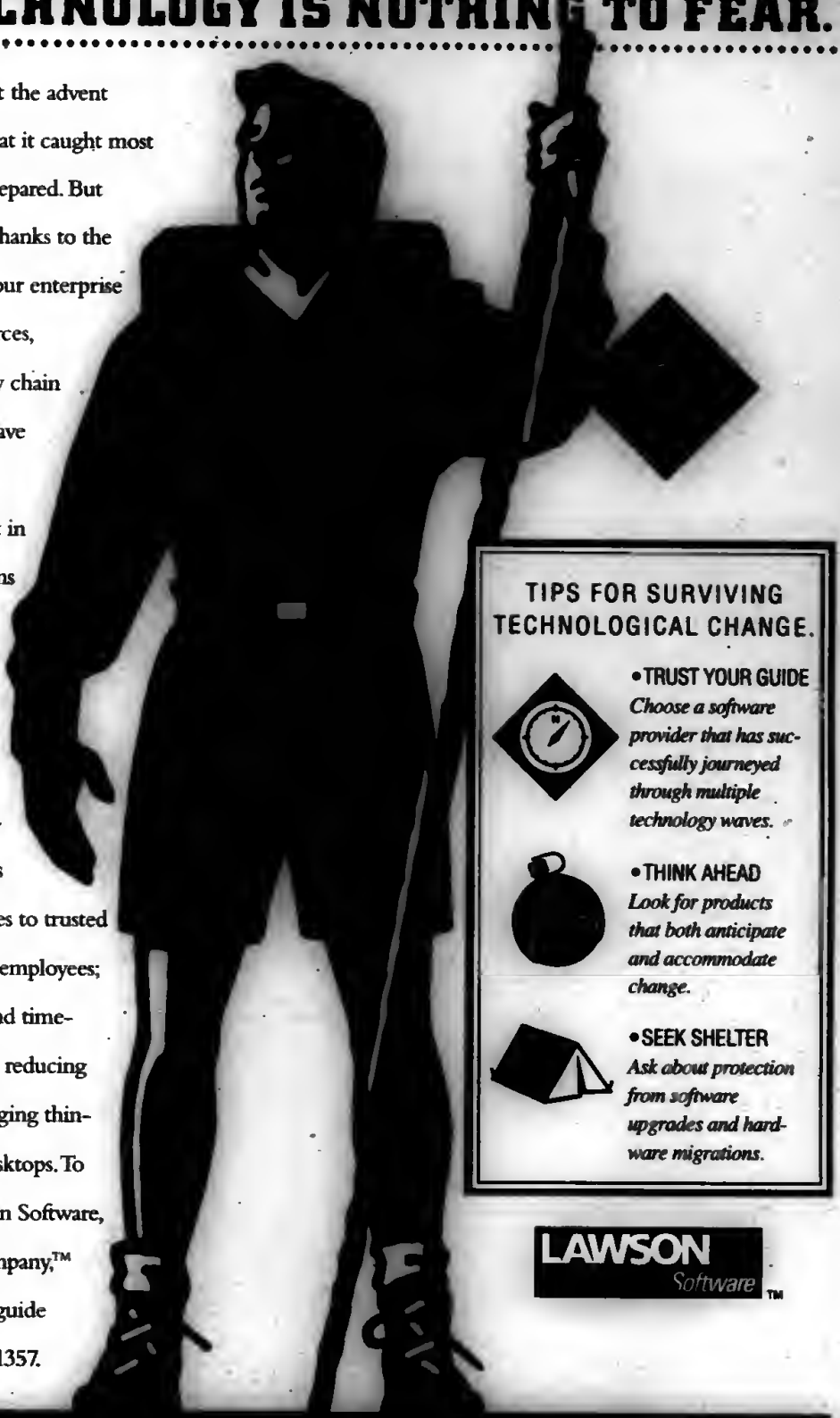

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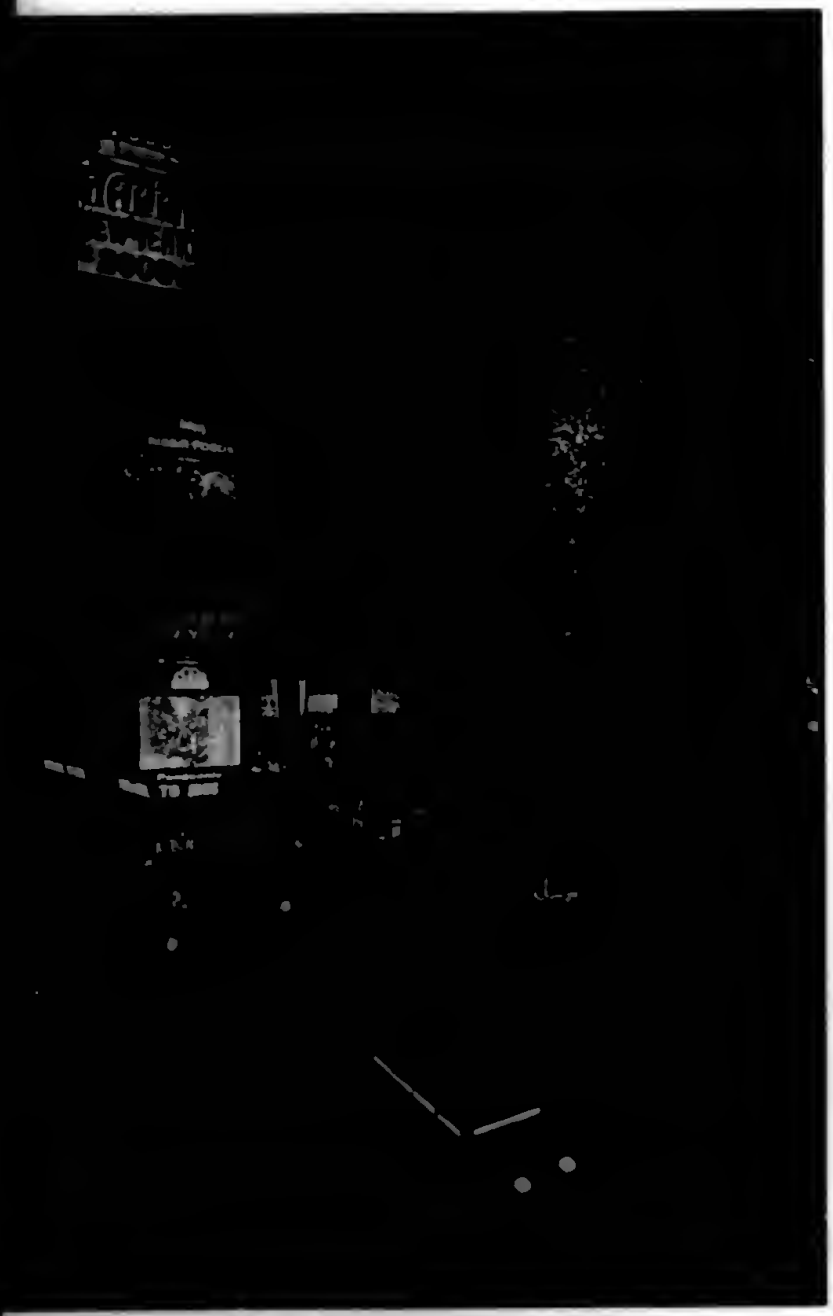

SAS® software didn't drop the ball.

While other software companies scramble to help you adapt your programs to handle the Year 2000 crisis, SAS Institute has just one question: *What* crisis? SAS software solutions—from data warehousing to data mining, OLAP to applied analysis—are ready to handle dates through the year 20,000 AD. And you can easily change the interpretation of two-digit years to the 100-year span of your choice.

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Software

Briefs

GOLD RUSH

Growth of the worldwide data mining market

*Projected
(includes service bureaus, systems integrators and vendors of data mining tools)
Source: Meta Group Inc., Stamford, Conn.

Java goes global

▸ *Pressure on Sun to open technical standards process*

By Sharon Gaudin

Justice Department's Arun Gurjale: When one company is in charge of developing a product, it's easy to stunt growth

AS SUN MICROSYSTEMS, INC. prepared Java specifications for an international standards body, executives at the company last week acknowledged that they need to work overtime to assure users that they will keep the technology open.

Sun last week received approval from the International Standards Organization (ISO) in Geneva to be the official party to submit the technical details of Java.

GLOBAL STANDARD

The approval is a milestone in Sun's effort to make the programming language a global standard. Sun won support from 20 of 24 member nations in the ISO. The U.S. and China were the only countries that voted against the move.

Final approval as a standard would be a boost for proponents of Java, who see the technology as a way to share applications across different hardware and operating system platforms.

In theory, Java users would be assured that the underlying technology has the same features and capabilities regardless of the system they use.

Sun's efforts to win ISO approval put the company squarely in the sights of rival Microsoft Corp., which pulled out all the public relations stops to paint Sun as a greedy company that is covertly trying to proprietize Java.

And because Mountain View, Calif.-based Sun is the first company to solely control a standardization effort, lots of

Sun, page 64

Data marts move front and center

By Craig Stedman

DATA MART TOOLS, originally seen as the scourge of big bad data warehouses, are moving to the center themselves.

Data marts built for individual business units have sprung up as cheap, easy alternatives to an enterprise data warehouse. But users are becoming wary of getting stranded on a bunch of disconnected data mart islands, pushing bottoms-up vendors to think more globally.

MANAGEMENT TOOLS

Informatica Corp. — which has been perhaps the loudest data mart advocate — last week formally announced PowerCenter, an upcoming tool that will let users build and centrally manage networks of compatible data marts.

Meanwhile, D2K, Inc. detailed an upgrade of its Tapestry warehousing tools, which debuted earlier this year with support for spawning sets of interconnected data marts.

Informatica's increased recognition of enterprise needs is sound policy to Doug Nashold, primary data warehousing consultant at Allmerica Financial Corp. in Worcester, Mass.

Allmerica built an initial data mart with Informatica's tools and plans to add several more of the miniwarehouses next year. The insurer's business units are "very separate," making an all-in-one data warehouse out of the question, Nashold said.

"But what we don't want are data marts here, there and everywhere without any centralized plan," he said. "We need a way to manage things across the enterprise." Nashold said he expects to take a close look at Informatica's PowerCenter software as Allmerica moves farther down the warehousing path.

But not all enterprise-orient-

Data marts, page 64

Robust apps are becoming Web-enabled

By Randy Weston

CLIENT/SERVER applications that were designed for heavy use and hard-core business analysis are heading for the World Wide Web.

But the initial rollouts will be restricted to users with simple demands, while power users will remain on client/server systems until the Java-based applications become more robust.

FIRST ON THE BLOCK

Computer Associates International, Inc.'s software division is one of the first vendors out of the gate.

"This is like 1989 for client/server."
– Ed Black, Aberdeen Group

CA's newly named software division, Prestige Software International in Islandia, N.Y., last week began shipping a Web-deployable version of its Masterpiece financial analysis and management software.

The Java-based product was designed to be installed on a server so users can access the application across a corporate intranet with Web browsers from any type of client.

Most of the large client/server vendors, such as SAP AG, Oracle Corp. and PeopleSoft, Inc., are planning to release server-centric versions of their software packages.

In fact, Oracle officials recently said that unless users demand otherwise, the next major release of its entire package — including manufacturing, financial and human resources applications — will be deployable only over the Internet [CW, Nov. 10].

"I haven't talked to anyone who doesn't think [Web-deployable applications] aren't going to be a significant production force," said Ed Black, an analyst at Aberdeen Group, Inc. in Boston. "This is like 1989 for client/server."

Robust applications, page 64

Sun asked to keep Java open

CONTINUED FROM PAGE 63

people will be watching.

"Having Sun in charge makes us nervous," said Arun Gurjale, a consultant who is helping the Department of Justice's Criminal Division gear up for JavaStation network computers.

"When it's exclusively one company, it's easy to stunt growth. You're not infusing new blood into it. It's inbreeding," Gurjale said.

Jim Mitchell, vice president of technology and architecture at Sun's JavaSoft division, said he is well aware that eyes will be trained on Sun's "open efforts."

"We're clearly setting a precedent," Mitchell said last Monday, the day Sun received official notice from the ISO.

"We've felt responsible from the start. In the front of all of our specification books, there's a free license for people to go and implement the Java platform. We can't back off from that," he said.

And while users are watching to make sure Sun keeps its promises to maintain an open submissions process in which other companies can give input on what should be done, some users are simply eager for Sun to push Java closer to becoming an industry standard.

"Historically, Sun has been truthful and up-front about Java and advancing it," said D. Scott Turvey, group manager of technical services at Nicholas-Applegate Capital Management, a San Diego-based investment firm. "They're positioned to deal with the issues and what Java will need. They've proved themselves to be a company that's earned our trust."

Robert Adams, vice president of business development at SoftPlus, Inc., a Cupertino, Calif.-based high-tech consulting company, said he believes Microsoft is behind a lot of the suspicion surrounding Sun's Java standardization push.

"Microsoft and Intel Corp. wanted to slow things down, inviting disputes and causing problems, so Java wouldn't get anywhere," Adams said. "But when a user looks at Java and figures they can cut 35% off their costs, they'll ignore Microsoft." □

NEW PRODUCTS

STAC, INC. in San Diego has announced Replica 3 Intranetwork Edition for Windows NT, server recovery software.

According to the company, the software centrally manages data backup and server recovery for multiple NT servers over a network.

Replicated data can be stored on the same server, on a standby server or on a tape drive. Users can access, restore and verify files without administrator assistance using any Windows software from Microsoft Corp.

Replica 3 Intranetwork Edition for Windows NT includes support for autoloaders and digital linear tape drives.

It costs $1,995 for a host server.

Stac
(619) 794-3741
www.stac.com

KNOWLEDGEPOINT recently announced Performance Now 3.0, performance review software.

According to the Petaluma, Calif., company, the software helps managers set and track goals and measure employee performance.

An interactive process guides managers through in-depth evaluations.

Users can use built-in review form templates or customize their own.

A business thesaurus and a language checker help managers avoid redundancy and legally sensitive word choices.

The single-user application costs $129.

KnowledgePoint
(707) 762-0333
www.knowledgepoint.com

LEGATO SYSTEMS, INC. has announced the NetWorker Business Suite Module for Sybase, storage management software for Sybase, Inc. servers running on Unix.

According to the Palo Alto, Calif., company, the software provides backup and recovery for Sybase SQL Server 11 and Sybase Adaptive Server 11.5.

It utilizes the Sybase Backup Application Programming Interface and can provide hot backups while the database is online. Users can implement full or incremental backups and can automate the process with tape autochangers and libraries.

The product costs $5,000 per Sybase server.

Legato Systems
(650) 812-6000
www.legato.com

ALADDIN SYSTEMS, INC. has announced Spring Cleaning 2.0, an uninstallation utility for Macintosh hard drives.

According to the Watsonville, Calif., company, the utility searches for and removes duplicate and unnecessary files, applications, folders and fonts on Macintosh systems.

A document finder button lets users search for all documents of the same type. Users can delete unwanted files or move them to archives using Aladdin's StuffIt compression.

The price is $120.

Aladdin Systems
(408) 761-6200
www.aladdinsys.com

HIGHGROUND SYSTEMS, INC. has announced Storage Resource Management, web-based software for storage management on Windows NT-based networks.

According to the Boxboro, Mass., company, the software lets users view disk defects, free and used capacity, largest files, largest directories, unbacked-up files and partition configuration. Java-based pie charts show which disks and servers are being accessed most heavily and how much space could be archived or deleted. Users can view information for an entire Windows NT domain or for individual computers.

The software costs $3,995 per server and $99 for each Windows NT Workstation agent.

HighGround Systems
(508) 263-5588
www.highground.com

Robust applications are becoming Web-enabled

CONTINUED FROM PAGE 63

For Kaman Sciences Corp., a Colorado Springs-based maker of software for the U.S. Department of Defense, an intranet was the answer to moving users off a legacy mainframe system.

Kaman Chief Information Officer Dave Anderson said an attempt to replace the mainframes with a two-tier client/server system failed because users in the technology-heavy company had such a mix of software and hardware, it was impossible to manage.

Anderson said managers and occasional users of Masterpiece now access the financial program through Web browsers to do monthly reports and other financial tasks. The software is located on a central server and is much easier to manage, he said.

But Anderson conceded that for "heads-down" users, such as purchasing managers, the Web technology isn't robust enough. He moved those users to a Unix-based character mode version of the Masterpiece application as opposed to the graphical user interface version. It looks, works and feels much like the former mainframe system.

"These people are used to [character mode]," Anderson said. "They hit the keypad and go blazingly quick. This is part of the reason we left them on character mode. It's not that you can't do the same thing on the Web, but it is going to take a while to do same thing over the Web."

WAITING TIME

Anderson said with these types of Web applications, users have to wait for massive Java applets to download. That makes start up very slow.

Although the applications also run a bit slower, Anderson said it isn't enough of a difference to prevent Kaman from moving everyone to a Web-based system in the future.

Black said until Java is more robust, most companies will likely keep power users on a legacy or traditional client/server platform, where application logic is shared between the server and the client PC.

But to get information to those people who need quick access to information to make strategic business decisions, the Web is the way to go, Black said. □

Data marts move to center

CONTINUED FROM PAGE 63

ed users are sold on the need for a product such as PowerCenter, which carries a hefty $225,000 starting price.

For example, Owens & Minor, Inc. uses Informatica's PowerMart development tool to build "virtual data marts" that share one database. Don Stoller, director of decision services at Owens & Minor, said he doesn't plan to change that strategy, which is also being followed by other users [CW, Aug. 4].

"The concept of [PowerCenter] is good, but I like our approach," Stoller said. Putting everything in one database should make it easier for end users to run queries across multiple data marts, he said. Owens & Minor, a $3 billion medical supplies distributor in Glen Allen, Va., has built three virtual marts and plans to add four more next year.

"There are many ways to centrally architect a data mart environment," said Wayne Eckerson, an analyst at Patricia Seybold Group in Boston. Because of its price, PowerCenter is best-suited for large companies that are decentralized, he said.

PRODUCT ROLLOUTS

PowerCenter gives users a central point for staging information and then feeding it to data marts, relieving the need to tie each mart directly to production systems. The software is scheduled to ship early next year, along with a PowerMart upgrade that starts at $40,000, said officials at Menlo Park, Calif.-based Informatica.

D2K, in San Jose, Calif., is adding wider support for databases and packaged applications to its Tapestry software along with new statistics gathering and systems management features. Pricing for Tapestry 2.0 starts at $75,000. The software also is due early next year. □

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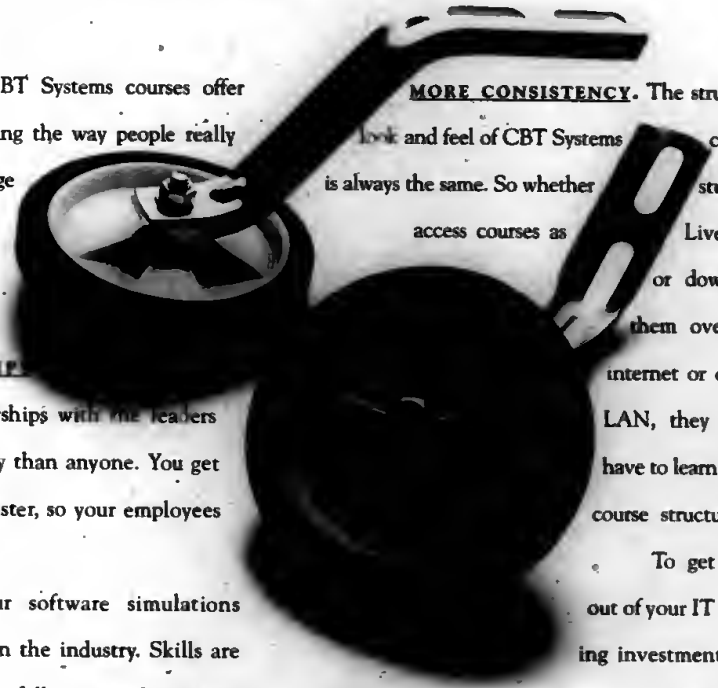

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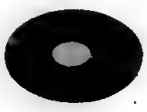

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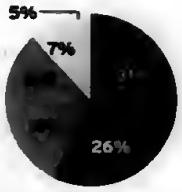
Servers & PCs

Briefs

WHO RULES UNIX?

Top manufacturers of Unix servers and workstations in 1996



Source: International Data Corp., Framingham, Mass.

Mirror, mirror

Storage Computer Corp. in Nashua, N.H., has begun offering extended mirroring in its line of high-end RAID disk arrays. OmniRAID Nanomirroring offers file-level data mirroring, a more detailed level of data protection than many other similar mirroring features.

Snapshot upgrade

IBM has upgraded its Snapshot storage software to support mainframe Virtual Storage Access Method (VSAM) data sets. Snapshot creates a fast copy of data pointers, not the data itself. That speeds up backup processes and saves on the requirements for extra disk space. Because IBM claims VSAM files make up half of all enterprise data, the new feature will improve Snapshot's ability to give users continuous access to all their data.

High-end tape deal

Breece Hill Technologies in Boulder, Colo., has inked a deal with IBM to use IBM's Magstar MP tape storage technology in Breece's line of tape libraries. Breece Hill, which focuses on midrange systems, will use the Magstar technology to offer high-end products. No details of Magstar-based products were available.

Zip drive to back up Win 95 files

By Gordon Mah Ung

MARKET LEADERS Symantec Corp. and Iomega Corp. have teamed up to offer a utility that lets users start their PCs and access files, a network or a printer even if Windows 95 crashes.

Norton Zip Rescue uses Iomega's 100M-byte Zip drive to back up vital Windows 95 files, including network and print drivers.

Users and analysts said such a utility could save users time and help recover files.

"I think there's definitely the possibility that it can reduce network administration," said Dennis Casey, a research analyst at Strategic Research Corp. in Santa Barbara, Calif. "Instead of having to come out and do specific things [a network manager can say] 'just run your Zip Rescue, then call me back if it doesn't work.' "

The utility draws on Cupertino, Calif.-based Symantec's experience with Norton Utilities for the PC and extends the res-

Zip drive, page 68

•Avoiding past problems

IBM smooths OS/400 upgrade

By Tim Ouellette

ALMOST UNNOTICED in IBM's promotion of its latest line of AS/400 machines is the fact that there is also a new version of the operating system on the streets.

But since the release of OS/400 Version 4 Release 1 (V4R1) in late August, users say the switch has been the smoothest transition ever for shops leery of past problems IBM has had reworking the operating system.

"For our company, V4R1 has been relatively smooth," said Michael Crump, technical projects leader at Ball-Foster Glass Packaging Co. in Muncie, Ind. "I always worry [with an operating system upgrade] because we run a wide gamut of different things on our AS/400. But it all has run clean."

OPERATING SYSTEMS

The operating system specifically takes advantage of the AS/400's RISC-based hardware improvements to give users the performance they need to run Internet and electronic commerce-based applications [CW, Aug. 25].

EASY TRANSITION

The upgrade process has been smooth, but the proof has come in the stability of the code.

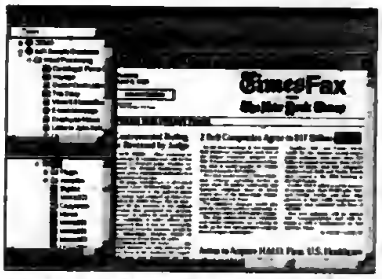
"Regardless of how good they are to install, the thing that breaks the men from the boys is how stable they are when they are up," said Al Barsa Jr. at Barsa Consulting LLC in Purchase, N.Y.

In fact, the rate of official "bug fixes" IBM has delivered is

IBM, page 68

CDs store data without microfilm costs

▸ *Alchemy offers improved file viewing and searching capabilities*



Information Management Research product indexes every word in every document

By Nancy Dillon

MANY COMPANIES keep client billing records on paper or microfilm for up to 10 years for customer service and legal purposes. But if the company has millions of business customers who generate multiple invoices each month, as in the case of telecommunications carrier MCI Communications Corp., accumulation of those traditional fail-safe storage media can run out of control.

Steve Klemz, senior manager of MCI's Document Service Center in Gaithersburg, Md., last year decided to convert seven years' worth of client invoices on microfilm to CD storage. He chose a CD archiving product from Englewood, Colo.-based Information Management Research, Inc. (IMR) because it let him produce CDs that mimic microfilm at a fraction of the price.

He said the IMR software, called Alchemy, was like microfilm because it guaranteed future readability of data. The program saves indexed files to CDs along with all necessary file viewing software.

"Because anyone with a CD player can use the discs, we can send them out to our billing agents as well as to our customers and sales and research

CDs store, page 68

SERVERS

HP Netservers head batch of Comdex debuts

By Kathleen Ohlson and Terho Uimonen
LAS VEGAS

HEWLETT-PACKARD CO. last week introduced two Pentium II-powered additions to its Netserver line.

The LC II line of Windows NT-based workgroup servers features up to two 266-MHz or 300-MHz processors and 36G bytes of storage. The servers are due in January at prices starting at about $2,700.

The LH II line of departmental servers, meanwhile, feature optional support for Microsoft Corp.'s Cluster Server. Powered by up to two 266-MHz or 300-MHz processors, the line can be fitted with up to 109.2G bytes of internal hot-swappable storage. Scheduled for a January release, pricing starts at about $4,200.

HP led a pack of server ven-

HP Netservers, page 68

COMDEX FAST FACTS

- ▸ More than 2,100 exhibitors
- ▸ 10,000 products
- ▸ 225,000 attendees

Zip drive to back up Win 95

CONTINUED FROM PAGE 67

cue disk feature in it.

Norton Utilities used 1.44M-byte drives to create rescue disks in the past, but creating the numerous disks was often tedious and didn't give users access to Windows 95 or network services.

George Sholl, a systems specialist who manages PCs at the Naval Family Service Center in Pascagoula, Miss., said the utility sounds like it could save him from having to rebuild crashed machines.

Norton's Zip Rescue backs up Windows 95 files, including network and printer drivers, to 100M-byte disks

Sholl said the new PCs the center has been buying all come with Zip drives, so the utility adds value to them.

Zip drive owners will be able to get Zip Rescue from the Web early next year

But user Joseph Gluckstern, director of integration at systems integrator Win Micro, Inc. in New York, said people shouldn't use the utility thinking it offers the same protection as a full tape backup.

"It's a great concept," Gluckstern said. "It takes three hours to rebuild a workstation. I can see this taking 15 minutes. But it's still not going to replace a tape drive."

During a catastrophic failure, users would boot the machine off a floppy disk that would automatically access Norton Zip Rescue. It checks for viruses, integrity of the CMOS, damaged files, hard-drive partition table and problems with the registry.

Even if the utility can't correct the problems with Windows 95, users can limp along by running Windows off the Zip drive or move data files to the Zip drive for use elsewhere, the companies said.

Norton Zip Rescue will ship with new Zip drives. It will also be made available to existing owners of Zip drives at either Iomega's or Symantec's World Wide Web sites early next year. It is also included with Symantec's Norton Utilities 3.0. □

IBM smooths OS/400 transition for users

CONTINUED FROM PAGE 67

the lowest of any OS/400 release ever. IBM learned its lesson with Version 3 Release 1 (V3R1), a total rewrite of the operating system needed to correct communications problems, released in late 1994.

With V3R1, "IBM rewrote the internal code and broke everything else as a result. It was a disaster for months," Barsa said. "But since then, there has been a big focus on quality and developing stable code."

"For the last couple of releases, the operating system just gets better and better," agreed Linda Burkett, chief information officer at Bergen Brunswig Corp., a pharmaceuticals distributor in Orange, Calif. "Now I see more and more similarity between the AS/400 and the traditional mainframe environment."

Bergen is consolidating 32 different AS/400s down to 12 and is testing V4R1 to run them all.

Another shop jumped at V4R1 for its built-in firewall.

Olsen Health Management is testing V4R1 to turn its AS/400 into a central intranet server to coordinate more than 200 largely autonomous business sites around the country.

"It has been pretty straightforward, and V4R1 will really make this possible for us," said Heather Poe, an information technology consultant at the Orlando, Fla., firm, which is the information systems arm of home health care provider Olsen Health, Inc.

STILL WAITING

But Poe and other users are also looking past V4R1 to the next release. Due in February, it will be a more extensive upgrade chock-full of new features, including native support for Java and Lotus Development Corp.'s Domino, and the availability of Windows NT on an internal PC Card.

"We are looking to early next year [to upgrade with Version 4 Release 2]," said Andrew Borts, a computer consultant at Systematic Control, Inc. in Davie, Fla. "Native Domino [for the AS/400] looks like it will be very impressive." □

CDs store data at less cost

CONTINUED FROM PAGE 67

departments," Klemz said.

Alchemy is Windows-based software that lets users drag and drop files from sources such as Windows NT file servers into its content-based indexing system. An add-on module and customized programming on the part of MCI has enabled computer output from MCI's billing mainframe into Alchemy.

"Keeping all of our historical information totally online with direct access storage devices would be best, but it's too costly," Klemz said. He said six months' worth of current data is accessible on the billing mainframe, but older data is off-loaded and archive copies are sent to MCI's six national billing centers.

MCI's new CD archiving program saves Klemz's department $1.5 million per year, he said. "The cash savings comes from not having to produce hundreds of thousands of pieces of film every month, and from not having to ship, store and deal with all that film."

The group is producing about 2,000 CDs per month, using five PC systems connected to the billing mainframe.

IMR announced that its latest version of Alchemy will ship next month, with pricing starting at $4,000. The new version has the same content management approach — meaning saved files can be indexed and retrieved based on contents, not just file names.

It also now lets users save indexed files to any storage device, except tape drives, that appears as a drive letter. That includes digital video disc drives and Zip drives from Roy, Utah-based Iomega Corp.

Expanded file format support in the new version includes Hypertext Markup Language and Portable Document Format support, allowing users to index information from the Internet.

"Alchemy can be viewed as the moral equivalent of microfilm because it's content indifferent, relatively inexpensive and guaranteed readable," said Bill Zoellick, analyst and director of CAP Ventures in Norwell, Mass.

But it can be viewed as something unique in the market, he said. "Many products can put information on CDs, but none to my knowledge have viewing and searching capabilities built-in like IMR does," he said

Zoellick said actual document management systems from companies such as Burlington, Mass.-based PC Docs, Inc. are more expensive and used more for collaborative work that requires revision control.

IMR said an upcoming feature due with Alchemy 5.1 in the first quarter of 1998 is Open Database Connectivity (ODBC) compliance. Ashok Kohli, records management adviser at the Rocketdyne Division of The Boeing Co. in Canoga Park, Calif., said that is important. Kohli uses Alchemy to scan and store millions of paper documents.

The indexed documents on CDs are available to 800 networked PCs. "The fact that the Alchemy system is proprietary was a concern for us because we like to adapt everything to our institutional systems," Kohli said. OOBC will allow that. □

HP Netservers head batch of Comdex announcements

CONTINUED FROM PAGE 67

dors unveiling new models at last week's Comdex/Fall '97 show.

Among the others were the following:

- NCR Corp. released the NCR WorldMark 4380 server, an eight-processor Pentium Pro-based system.

The server is based on 200-MHz Pentium Pro processors and has 512K bytes or 1M byte of cache per CPU. It supports a maximum of 8G bytes of error checking and correcting (ECC) memory, has 108G bytes of storage and has 10 LAN and 20 WAN connections.

Pricing for the NCR WorldMark 4380 starts at $17,900 for a base configuration and runs to $60,000

- Acer America Corp. launched a server line called the AcerAltos 19000Pro4 and expanded its entry-level server line with the AcerAltos 930.

The AcerAltos 19000Pro4 is a four-way Intel Corp. Pentium Pro SMP (symmetrical multiprocessor) server that has 16 dual in-line memory slots with four-way memory banks for a maximum of 4G bytes of ECC onboard memory.

The AcerAltos 930 is powered by a maximum of two Pentium II 233-MHz to 300-MHz processors with 512K bytes of ECC cache, and the synchronous dynamic RAM slots can hold up to 512M bytes of ECC memory. Both products will be available through corporate resellers next month.

The AcerAltos 19000Pro4 will cost between $14,000 and $20,000, depending on configuration. The AcerAltos 930 will cost between $3,200 and $4,500. □

Ohlson and Uimonen write for the IDG News Service.

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intel inside pentium

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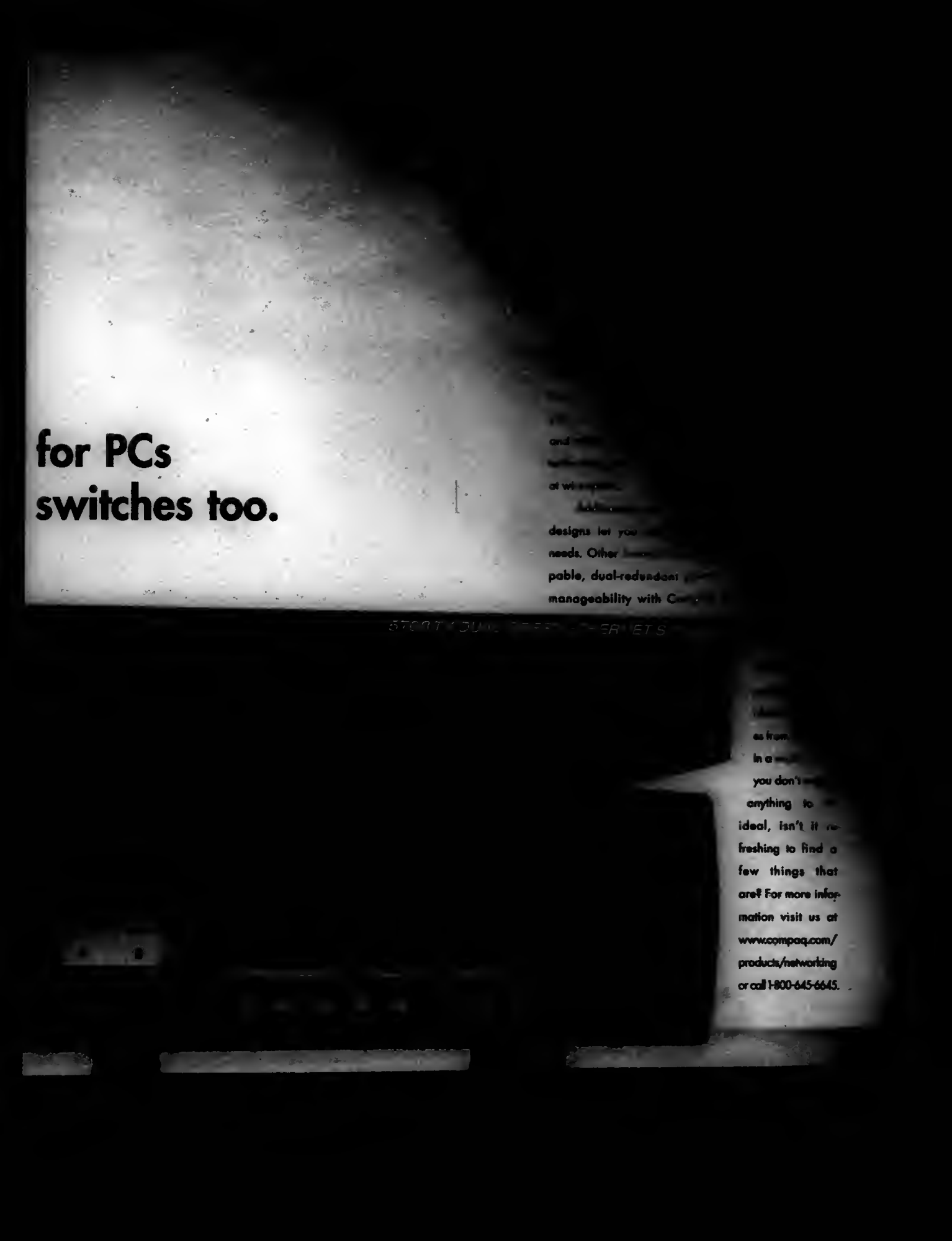
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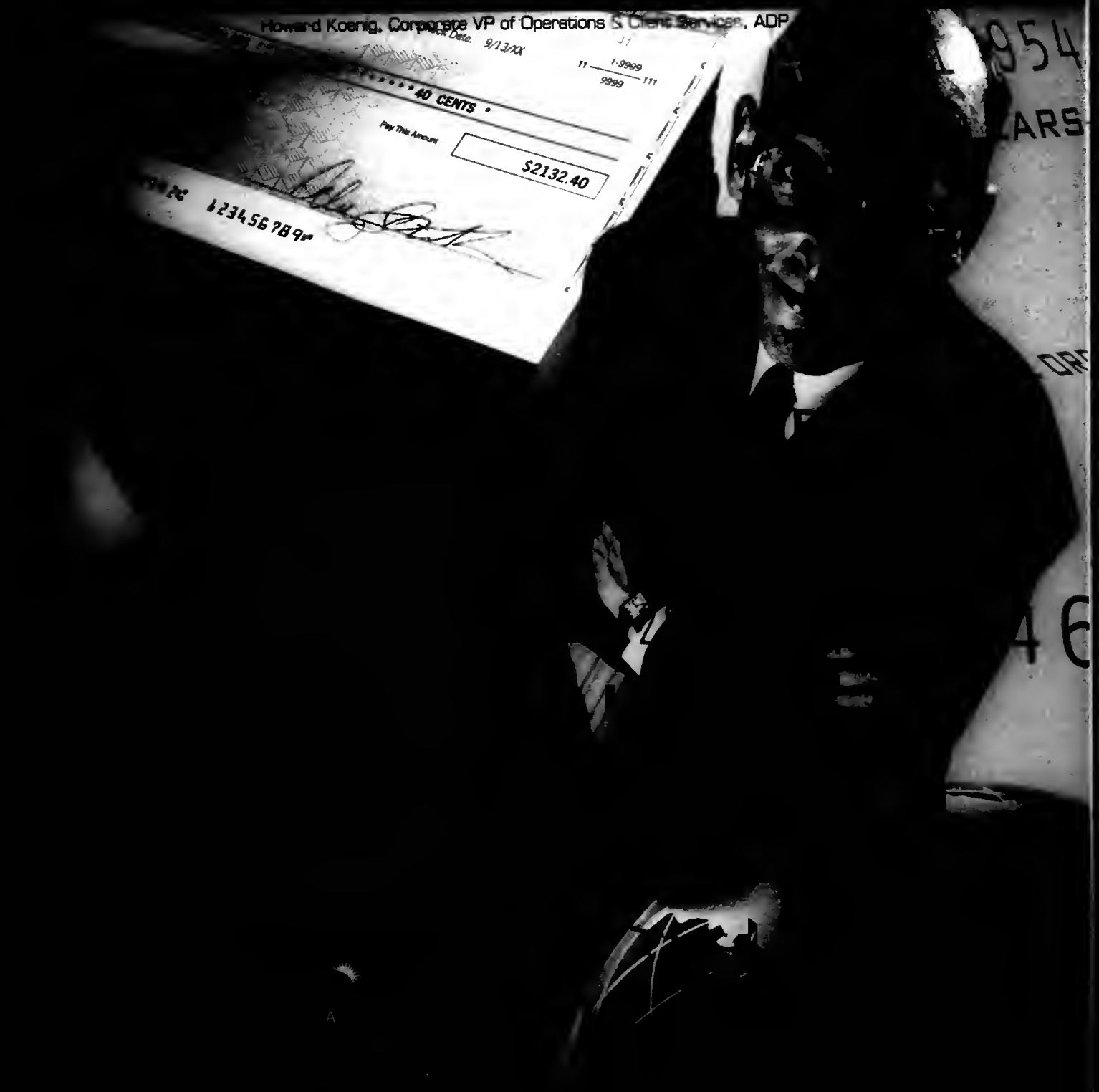


Mobile Computing

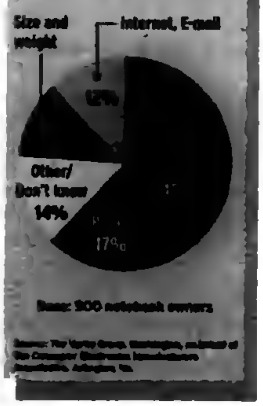
Briefs

Standard proposal

[redacted] Corp., Fujitsu Personal Co., Intel Corp. and Sharp Electronics Corp. have proposed a standard for infrared connectivity that [redacted] the wireless [redacted] specification. [redacted] Building on the future of [redacted] and network computing, IBM combined three branches — personal software, networking software and E-business — into a Network Computing Software Division, according to John Soyring, a vice president of IBM's Personal Software Products division.

MOBILE PRIORITIES

What aspect of a mobile computing product is most important to you?



Source: The Yankee Group, Washington, outlook of the Computer Electronics Manufacturers Association, Arlington, Va.

PRODUCT REVIEW

▸ *Avigo 10*

OVERALL GRADE B

TEXAS INSTRUMENTS, INC.
Dallas
www.ti.com/avigo
Price: $299

Pros: Sleek design and good applets, including database capability

Cons: No modem or network connection, so it isn't designed for E-mail

Avigo shines in all areas but E-mail

By Chris DeVoney

IN THE CROWDED WORLD of electronic handheld organizers, the $299 Texas Instruments, Inc. Avigo 10 does more than just stuff your telephone book and calendar into your pocket. The product features a sleek design and a good complement of applets. However, unless Lotus Development Corp. Organizer 97 (which is included) is your personal organizer of choice for the desktop, plan on buying some third-party software to make the right connection.

TI's Avigo 10 is a pocket organizer with several built-in applications: calendar and schedule, address book, task manager, memo pad, calculator with financial and date modes and expense tracker. Unlike its

Avigo, page 76

PalmPilot leads the pack

▸ *Pocket organizer enhances mobile communications, retrieves data*

By Suruchi Mohan

THEY TOOK A long time coming, but they're finally here.

Just two years ago, it seemed palmtops were destined to die an inglorious death. Models crammed too many features into awkward packages that made them difficult to use. Sales were slow.

But that changed with the emergence of the PalmPilot from U.S. Robotics Corp., a division of 3Com Corp. in Mountain View, Calif., which has led the charge of tiny devices that have now attained a comfortable market position.

Analysts say the PalmPilot's success comes from technologists who understand why the palmtop computer came into being. The PalmPilot has sold "about 1 million" units since it started shipping in May 1996 and has 66% of the handheld market, according to Dataquest in San Jose, Calif.

"All the credit goes to the people who took a bold gamble and defined something that met user needs," said Ken Dulaney, vice president of mobile computing at Gartner Group, Inc. in San Jose, Calif. "People at Palm [Computing, a company acquired by U.S. Robotics] understand what people do with these things," Dulaney explains.

PalmPilot, page 76

JOHN KEATLEY/GETTY

Pagers speed response time for appraisals

By Barb Cole-Gomolski

LOTS OF COMPANIES have hooked pagers to systems management applications to alert information systems managers of downed servers and other outages.

MESSAGE-BASED APPLICATIONS

But Countrywide Home Loans, Inc. in Calabassas, Calif., has taken the idea one step further.

The mortgage company uses pagers in conjunction with its messaging network to cut the time it takes to process a loan application.

More than 1,500 employees at the mortgage company are equipped with pagers linked to the company's Lotus Development Corp. Notes system. In addition, about 1,200 contract appraisers working for Land Safe Appraisal Service, a wholly owned subsidiary of Countrywide, in Plano, Texas, are outfitted with pagers that Land Safe uses to notify them of appraisal jobs.

When Land Safe needs to do an appraisal, the Notes application automatically selects an appraiser based on predefined criteria, such as the location of the property and the appraiser's current workload. It then sends the appraiser a text message alerting him to a pending assignment, including the proposed time of the appraisal and the location of the property.

"They have 60 minutes to call us back and tell us if they can do the job," said Michael Faine, president of Land Safe. If the appraiser doesn't respond, another appraiser is paged.

Using the pagers to alert ap-

Pagers, page 76

Mobile³
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Pagers speed response time for appraisers

CONTINUED FROM PAGE 73

praisers has cut the time it takes to do an appraisal to about four and a half days, Faine said. The national average is seven to 10 days, according to Faine. Reducing the appraisal time means that Countrywide can approve loans faster than before and faster than its competition.

In the past, the company contacted appraisers by telephone, and often had to rely on voice mail because the appraiser was out in the field. As a result, it commonly took more than a day to hear back from an appraiser, Faine said.

Automating the selecting and paging of appraisers is innovative, according to Leilani E. Allen, a partner at Tenex Consulting in Burlington, Mass., and a former chief information officer of a major mortgage company. Countrywide also uses the pagers in conjunction with Notes and the company's systems management platform, paging not only IS managers when an outage occurs, but also line-of-business managers. Countrywide IS staffers wrote custom interfaces between Notes and the company's systems management platform.

"When an IS manager receives a page, he starts working on the problem. The business manager gets the same page, and moves directly [to fixing it]," said Phil Usher, Countrywide's senior vice president of messaging.

There are several advantages to building the paging system around the messaging network, according to Usher. First, all of the company's 6,500 employees have access to Notes, and Lotus sells CC:Mail Pager Gateway to hook the E-mail system to pagers. Second, extensive details about the nature of the system problems — such as server outages — are captured in Notes, where IS staff can analyze them. Although the paging application is a big improvement over voice mail, it isn't a panacea, Usher said. Communication is one-way, so workers can't respond to the text message using their pagers.

"My vision for the future is a time when someone can receive a message on a handheld wireless device that alerts him of a problem and provides a choice of action like ignore, retry, fail over, reboot, escalate, etc.," Usher said. Right now, the paging companies don't have the infrastructure to support that kind of two-way communication, he said.

Another concern is that there is currently no way to get a return receipt, so you can never be sure that the person actually got the page, Usher said. □

Avigo shines in all areas but E-mail

CONTINUED FROM PAGE 73

major competitor, U.S. Robotics Corp.'s PalmPilot, the Avigo also handles small database tasks and offers both a world clock and a sketch pad.

Physically, the charcoal-colored plastic slate weighs 7 ounces and measures 3-1/4 by 5-1/2 by 3/4 in., which means it is slightly wider and shorter than the usual television remote control and has a comfortable feel in the hand. The two replaceable AAA batteries last for more than 40 hours of active use.

The Avigo screen makes reading spreadsheets easy

The unit features a very readable 160- by 240-pixel backlit screen with a protective plastic cover that flips out of the way. An interesting twist is that the Avigo can work in portrait or landscape mode, which makes reading wide data listings from spreadsheets easy.

For connections to your Microsoft Corp. Windows 95 or NT 4.0 desktop, TI bundles several programs on its CD-ROM. The cornerstone is the Lotus Organizer 97 personal information manager. Puma Technology, Inc.'s IntelliSync software moves data between Organizer and the unit. The Avigo Manager makes the connection between the unit and the desktop for memos, sketches and data.

The unit includes a foldable docking stand that connects to the PC's serial port and a 115K bit/sec. infrared port for transferring information.

BUILT-INS ADD VALUE

The Avigo compares favorably with the PalmPilot. However, the Avigo has some useful features built in that the PalmPilot doesn't, such as more calculator functions and a freehand sketch feature that is useful for quickly scrawling directions or maps. Software for both functions is available for the PalmPilot.

One major area of difference between the two is data entry. Both units present a small, on-screen "keyboard" that lets you enter characters by tapping on the screen. The PalmPilot, however, offers Graffiti handwriting recognition, which can be useful after learning how to write many characters.

If you use another organizer, such as Symantec Corp.'s ACT or Microsoft's Outlook, you will want the full version of IntelliSync, available for another $69, to move files between the desktop and the handheld.

E-MAIL ISSUE

Finally, the Avigo doesn't handle one function that is optionally available for the PalmPilot — electronic mail. The Avigo doesn't offer a modem or any network connectivity. If you are looking for a handheld that can do it all, the Avigo lacks this important functionality.

The Avigo 10 is a good handheld organizer with software for the mobile or office-hopping professional who needs to bring his desktop calendar and other information to his shirt pocket.

If you accept Lotus Organizer as your personal information manager, the Avigo is a great all-in-one package.

If you use another scheduler, plan on buying more software. And if you're looking for E-mail, you're better off with a PalmPilot than this Palm-wanna-be. □

DeVoney, a reviewer in Seattle, can be reached at chris@cybercritic.com

PalmPilot leads the pack

CONTINUED FROM PAGE 73

But it isn't just common usage as a calendaring device and address book that accounts for sales of this product. Increasingly, the PalmPilot is becoming a platform for mobile applications such as information retrieval and E-mail, according to Phillip Redman, senior analyst for wireless mobile communications at The Yankee Group in Boston.

Eric Martin, a LAN/WAN lead engineer at Harley-Davidson Motor Co. in York, Pa., said engineers and technicians at his company use the PalmPilot for data collection, with tools such as Pendragon Forms from Pendragon Software Corp. in Libertyville, Ill.

On the assembly line, those employees collect quality control and statistical information about motorcycles in production. When they return to the office, they use the PalmPilot's HotSync data synchronization feature to update the information in a Microsoft Corp. Access database.

Before PalmPilot, Martin said, employees used "little scraps of paper that sometimes made their way back to the office." Martin said he likes the capabilities of the PalmPilot so much, he doesn't carry his laptop anymore.

To Stan Rose at Bankers Trust in New York, the functions of the PalmPilot and a laptop don't overlap much. The PalmPilot is a replacement for paper-based date books and a desktop Rolodex. It also works well as a tool for calendar management, contact lists, to-do lists and memos, said Rose, vice president of bankwide technical infrastructure services.

Previously, Rose had his lists scattered at home, work and on his laptop, on paper or in an organizer. Now, all the lists are in one place. And while Bankers Trust doesn't officially support the PalmPilot, so many people use them that Rose said the company will provide them to employees with their manager's approval.

EASIER TO USE

The laptop would be far too complex a device for Lee Church's home health workers, said the project manager for Outreach Health Services in Austin, Texas.

Most of the 4,000 workers — covering two-thirds of the state — who provide noninstitutional home care have never used high-technology before. So Church is rolling out PalmPilots. Using homegrown software, they will check off items on a to-do list, indicate what they were unable to do and why and report any changes in the conditions of their patients. All the information is then uploaded to a central database.

The simplicity of the device, Church said, put PalmPilot ahead of its competition. □

Mohan is a freelance writer in Los Altos, Calif.

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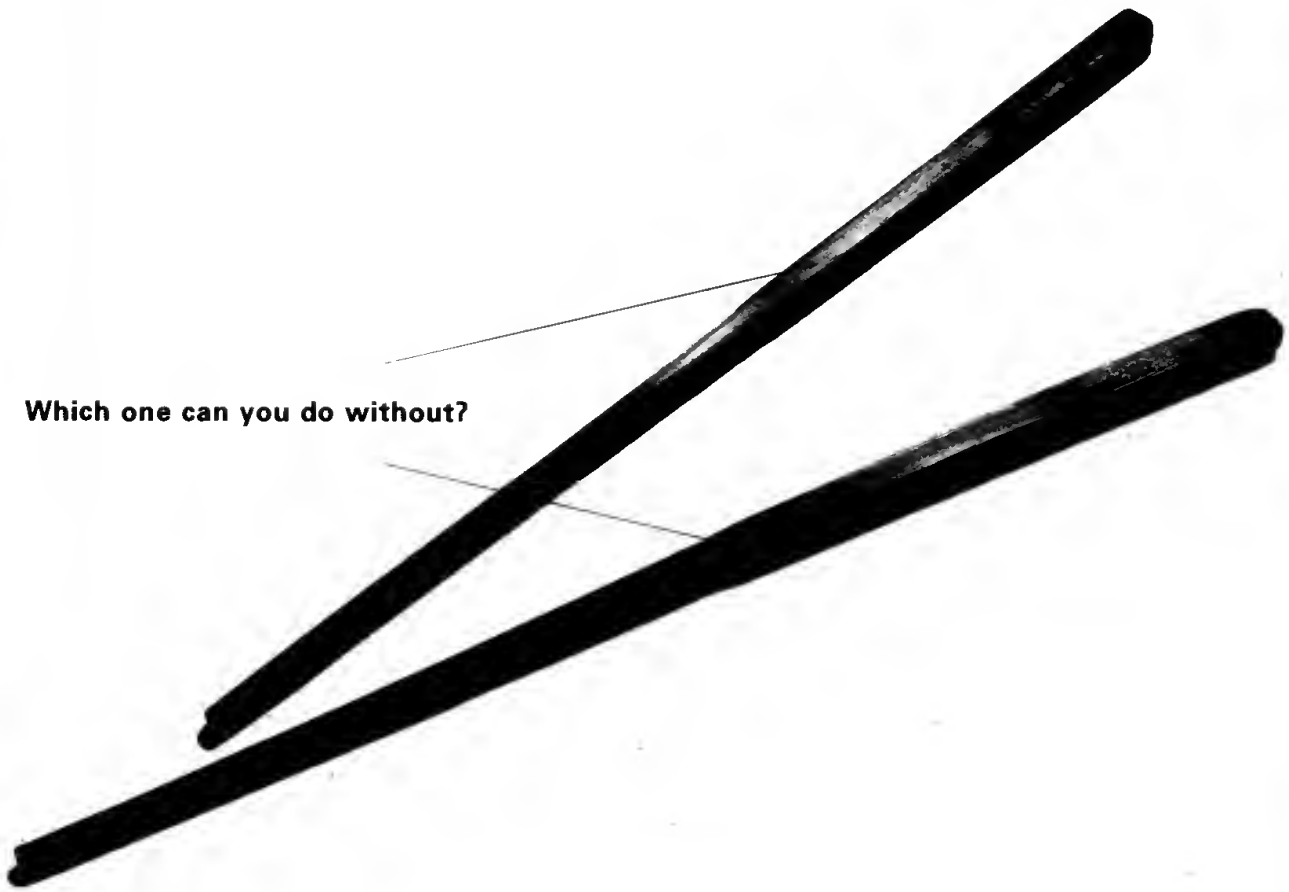

Which one can you do without?

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Survey says . . .
IS managers don't hate all those survey takers. But the surveys themselves can drive them nuts. Page 82

Managing

On the FRONT LINE

BY ROBERT L. SCHEIER

IS leader Bud Baumann plays a pivotal role as Cigna tries to do something revolutionary in the insurance industry

Bud Baumann (right) and Susan Case talk about Cigna IntegratedCare to potential customers last month in Chicago

NICK CARDILLICCHIO

Bud Baumann learned long ago to use computers not for their own sake, but to gain a competitive edge.

How long ago? In an 11th-grade Cobol programming class at his Belran, N.J., high school.

"The teacher said, 'We use technology to solve business problems,'" Baumann recalls. "They were the very first words out of her mouth . . . and I've never forgotten."

It's a message Baumann now preaches to Fortune 500 customers as vice president of technology at Cigna IntegratedCare. Not only must Baumann deliver applications that help cut costs for benefits managers at large companies, but he also must convince them that Cigna Corp. cares more about customer problems than snazzy technology.

Cigna stays "ruthlessly focused on investing in only those things that deliver our value proposition," he told potential customers of IntegratedCare, a new Cigna offering, last month in Chicago. "We are investing our resources where there is a large payoff, not just for us, but for you, and where there is low risk."

Baumann has been following his teacher's advice for more than 20 years, including the 12 he's spent at Cigna. "He really understands the [IntegratedCare] product," says Tony Cuva, information technology director at Cigna IntegratedCare, who has known Baumann for most of his Cigna career. "He's probably lived it for the past five or seven years."

With IntegratedCare, Philadelphia-based Cigna is trying to fundamentally change how employees receive workers' compensation insurance, health care and disability coverage. Cigna, like other providers, historically has handled the paperwork for such benefits separately.

Rather than shuffle a patient's case and paperwork to different providers and insurers, Cigna hopes to coordinate all the work itself. Cigna claims that with a pilot program, it has already cut lost wages and medical expenses by 10% and increased the company's market share.

"Our sound bite [for the industry] is 'Collaborate, don't replicate,'" Baumann tells customers. "We're talking about squeezing out the inefficiencies" in the system.

On the front line, page 80

On the FRONT LINE

CONTINUED FROM PAGE 79

Cigna IntegratedCare is a classic example of how business-changing IT projects are being implemented. Surveys from researchers such as Gartner Group, Inc. and Meta Group, Inc. show that control over IT spending is moving from information systems organizations to end users and that senior business managers are paying closer attention to IS spending.

But the real story often is that IT as it once was is fading away and being replaced by business development teams on which IT leaders such as Baumann serve alongside corporate lawyers, marketers, operations experts and customers.

An example is the partnership between Baumann and Susan Case, his business counterpart as vice president of product development. Baumann touts a new claims-entry system not with technobabble, but with a story about how it makes life easier for an employee calling to report that her spouse just fell off a ladder.

And it is Case who jumps in with an explanation of how the system will maintain the accuracy of the data it pulls from Cigna's production databases.

Strong vision

Ever since those high school years. "I was enamored by the computer," Baumann says. But "I didn't want to be somebody who made computers; I wanted to be someone who solved problems" with them.

Baumann was also goaded by his father, who had such a "strong vision around technology" that he said he would help pay his son's way through Rutgers University only if he minored in computer science as well as majored in business administration.

A lean 37-year-old whose words spill out in machine-gun fashion, Baumann joined Cigna in 1981. He was one of a handful of candidates picked for a challenging course to develop future IT leaders. The graduates then went through six-month rotations at various Cigna divisions. His biggest lesson from the course: "You have to understand the big picture."

That has come in handy for Baumann, who, over the past nine years, has served on three Cigna task forces on how to provide what the insurance industry calls "24-hour" coverage. That means a policyholder would be covered for injuries whether or not they were suffered on the job.

At first, the motivation behind the plan was to end "double-dipping," in which a policyholder collects benefits from both a group health plan and a workers' compensation insurer for the same injury or illness. Over time, Baumann learned, employers who bought insurance for their workers also wanted disability coverage included, and he began seeing more strategic needs it could fill with such an "integrated" offering.

One Cigna customer, Timothy Bobrowski, a health care specialist at AlliedSignal, Inc. in South Bend, Ind., estimates that such an approach could shave 8% to 12% off AlliedSignal's total payroll costs. That includes direct savings, such as the actual cost for benefits, and indirect costs, such as reduced absenteeism and higher productivity, he says.

Baumann and his team have built a new Windows NT workstation interface for the company's existing systems. With it, a nurse or claims processor can input even sketchy details of an illness or accident to get the claims process rolling. And with a click of the mouse, the person can connect to legacy databases to check the patient's eligibility for care or see if he has a record of suspicious claims.

Culture clash

Linking different forms of insurance also meant bridging cultural and political gaps within customer organizations as well as Cigna. Within a large customer company, different benefits might be handled by risk management, human resources or payroll departments, each of which might fear it would lose clout under integration, says William Molmen, general counsel at the Integrated Benefits Institute, a San Francisco information and benchmarking organization.

The same turf wars can break out within insurance providers, Molmen says. That explains why Cigna, as well as its competitors, has formed subsidiaries specifically to focus on the integrated coverage market.

Baumann "can defuse tense situations by using humor," Cuva says, but "he also understands that when things are tense, that's the time you really have to show your leadership qualities. You have to be more objective and listen more carefully than you normally [would]" before reaching a decision.

Baumann and his team must continually communicate their vision to external customers, users within Cigna and its various development groups. As he does so, Cuva says, "he knows the touch points to hit on. . . . He's able to relate [integrated care] to the individual he's dealing with, whether it's [a] programmer in another division or a president in another division, or Bill Taylor, our chief operating officer."

It also means long hours, which Baumann is used to from his college years at Rutgers. There, he did late-night programming stints while juggling coursework and part-time jobs such as catering and working in a machine shop.

He says he now works 60 to 65 hours per week, which includes reading about leadership skills and seeking tips from mentors and peers about how to tackle new jobs. "I consider myself a learnaholic," he says. "A lot of my work is what I consider fun. I have a thirst for learning."

Baumann's 11th-grade teacher would be proud. □

Scheier is Computerworld's senior editor, management.

Chris Sanders

THE BAUMANN FILE

Charles "Bud" Baumann

TITLE: Vice president of technology, Cigna IntegratedCare, Philadelphia.

EDUCATION: Bachelor's degree in business administration, Rutgers University, 1981.

CAREER: Joined Cigna in 1981 as a programmer trainee. Was a systems analyst until 1983. Was an independent consultant from 1987 to 1990. Named division IS officer of Cigna Reinsurance in 1994. Joined Cigna IntegratedCare team in 1996.

HOBBIES: Sports, reading, spending time with his three daughters.

Less paper, easier claims

Great teams are built around big ideas.

In the world of medical and disability insurance, the great idea is integration: Sweep away the tangle of forms, providers, reviewers and treatment protocols and give employees a single person to whom they can submit a claim or track a payment check.

The insurance provider that untangles that mess first will hit a home run of business benefits with its customers. It will cut costs for employers by reducing their paperwork and getting people back to work faster.

Cigna is stepping up to the plate with Cigna IntegratedCare, a subsidiary launched last month and headed by President Dan Duford. The insurer also hopes the integrated offering will boost future earnings. Shortly before unveiling the subsidiary, Cigna said it expects lower earnings for its third quarter, which ended Sept. 30, due to increased medical costs.

One central tenet of Cigna's approach is to centralize the claims processing in one location, where experts ranging from nurses to claims administrators work side by side to find ways to root out fraud, return employees to work sooner and coordinate care among multiple providers.

Indeed, for the past 18 months, Cigna has been delivering integrated workers' compensation, short-term and long-term disability and nurse care management at its Irving, Texas, facility. The result: Workers' compensation and disability costs dropped 10%, absences due to short-term disability dropped 10%, and attorneys were called in half as often.

Insurers have been experimenting with integrated benefits delivery for 20 years, but Cigna's program "is one of the earliest . . . to go into effect" and is the first to produce published results, says William Molmen, general counsel at the Integrated Benefits Institute.

The company has completed a nationwide rollout of its first suite of products, AbilityReturns, which integrates workers' compensation and short- and long-term disability coverage. Early next year, MedReturns, which integrates those benefits as well as health care management, will become available in Denver, Dallas, Atlanta and St. Louis, and it will expand it to other cities through the year.

— Robert L. Scheier

COMPUTERWORLD

This week on our Web site, Bud Baumann talks about IS managers and leadership with Rick Saia, associate editor of Managing. See www.computerworld.com.

Overview

International Data Corp. (IDC) believes that 36-track tape technology will ship well into the next decade and will maintain a dominant position in the high-end half-inch installed base for at least the next five years. Our research shows that 36-track technology is well-suited for high-access, performance-sensitive small object tape workloads. The large installed base of 36-track drives may further elongate the technology's life cycle.

IDC
INTERNATIONAL DATA CORPORATION

ILLUSTRATION BY CHRISTOPHER BING

SOLID INVESTMENT: Many companies have made tape their investment of choice.

36-Track Tape is Alive and Well

and dominating high-end interchange workloads

By JOHN McARTHUR and DAVID VELLANTE
INTERNATIONAL DATA CORP.

Highlights

- 36-track tape will continue to ...minate high-end data interchange workloads for the foreseeable future.
- Vendors are continuing their investments in higher-performance and lower-cost 36-track devices.
- Understanding workloads and applications can help users select the right technology.
- Application-specific middleware investments are abundant for 36-track technology.
- Data interchange and document/imaging management workloads are a "sweet spot" for 36-track technology.

Square tape technology or, more specifically, 36-track tape, continues to be the mainframe and midrange tape technology of choice. IDC research shows that 36-track technology accounts for more than 80% of vendor revenues for half-inch tape drives supporting high-end and mid-sized system applications.

Introduced as the data interchange standard for tape in the early 1980s, half-inch cartridge technology has evolved over the past two decades. One breakthrough occurred in the late 1980s with the introduction of 36-track technology,

The introduction of 36-track technology doubled track density, raised performance and improved reliability of half-inch cartridge technology.

which doubled track density, raised performance and improved reliability. In the last decade, 36-track performance has been increased further through controller, drive, robotic and application-specific software enhancements. Investment protection for the media has also been provided; today's 36-track drives can read—and many can write to—18-track cartridges.

Even as vendors develop higher-capacity, high-performance tape drives, their investment in 36-track technology continues. StorageTek in particular has enhanced 36-track performance and automation with faster controllers, libraries and improved tape handling techniques. The company recently announced that its Virtual Storage Manager, which is to begin shipping in early 1998, will support both TimberLine 36-track tape and high-capacity RedWood tape. Sutmyn Storage is shipping a "virtual tape" solution with support for 36-track tape. IBM recently announced 36-track offerings for the midrange market. Finally, at least one 36-track tape manufacturer—StorageTek—is planning to deliver Fibre Channel connectivity for 36-track tape.

Leasing companies have also endorsed the technology by making 36-track tape their investment of choice. The wisdom of this strategy is demonstrated by high used equipment values and a scarcity of product. Perhaps most importantly, application software and middleware vendors continue to develop application-specific solutions that support 36-track technology.

Even as vendors develop higher-capacity, high-performance tape drives, their investment in 36-track technology continues.

Applications and workloads

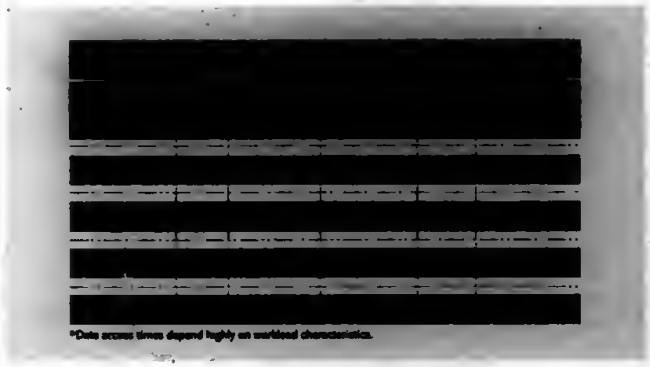
To better understand the application of tape technology, IDC uses a three-dimensional model, consisting of:

- Tape workload
- Application
- Industry

Tape workload describes the type of activity performed by the tape devices. It includes:

- Backup (for onsite application

Application software and middleware vendors continue to develop application-specific solutions that support 36-track technology.



*Data access times depend highly on workload characteristics.

recovery, offsite disaster recovery and application testing)

- Archival (including near- and long-term archiving)
- Data interchange (where tape is the lowest common denominator of data exchange)

Application refers to the type of business activity supported by the technology. IDC uses four categories to describe application:

- Business processing
- Decision support
- Collaborative computing
- Scientific

Business processing refers to traditional activities that support business-critical operations, such as accounting, HR and payroll. OLTP and database-intensive applications are also in this category. Such applications tend to be mission-critical (24x7) and update-intensive, and have highly random access patterns. These environments show high levels of tape use, with tape data sets created to support report generation, report archive and backups for application recovery, data interchange and application testing.

Decision support applications environments (which may involve a data warehouse) typically employ OLAP, data mining and data analysis tools to give users information access. These applications tend to be bandwidth-intensive with heavy read activity, often reading the "data interchange" tapes created by business processing workloads. They tend to be business-critical (i.e., 8x5) but are not necessarily mission-critical.

Collaborative computing applications, such as E-mail and Lotus Notes, are often referred to as "workgroup" computing. Like business processing and decision support applications, they tend to be read-intensive but have a more unstructured data content.

Scientific applications are compute- and bandwidth-intensive, and vary greatly in data and content types. They tend to have larger I/O request sizes with a mixture of read and write intensity, and frequently (i.e., in the case of geospatial applications) require enormous tape capacities.

Data life and data access patterns are often a function of *industry*. For instance, banking applications such as checking and credit card tend to be on predictable monthly and annual cycles. Transactional volumes are affected seasonally (especially credit card activity), but the highest activity period for credit card billing inquiries and checking account statement inquiries tends to occur shortly after the statements are sent to customers.

Data (in the form of reports) will likely be kept on disk or fast tape for the first 30 to 60 days, then migrated to deep archive as inquiry activity declines. Restoration to high-performance 36-track tape or disk may be required to support year-end reporting and statement processing.

Insurance applications, such as claims processing, are most affected

Business processing environments show high levels of tape use, with tape data sets created to support report generation, report archive and backups for application recovery, data interchange and application testing.

Data life and data access patterns are often a function of industry.

not by predictable monthly and annual cycles, but by less foreseeable natural disasters and seasonal factors such as weather. As a result, extremely high data access rates may be required during times of "disaster."

Document management

Document management and imaging, which is emerging as a tape-intensive environment, is hard to classify. Is it an application or a workload?

IDC characterizes document management as an archival workload that supports a variety of applications. It may require near- or long-term archiving and might lend itself to multiple alternative technologies like tape, optical or magnetic disk, depending on data life, data access patterns and cost/performance tradeoffs.

In many document and image management applications, data moves through a hierarchy, from higher-performance, higher-cost technologies to lower-performance, lower-cost ones. Early in the life of a data object, data may be stored on disk. But the subsecond response time of disk products comes at a high cost, and once the use of the object is primarily customer service-related, the business value of subsecond response time falls off dramatically.

In many customer service applications, response times of 30 seconds are acceptable and dramatically more cost-effective. For these applications, high-performance 36-track tape combined with high-speed automation is the next logical choice for object storage.

This tape strategy is often used in institutional investor applications with daily report cycles. In such applications, report access frequency diminishes rapidly with time. As a result, data is likely to be kept on disk or high-speed tape for the first few days to months, then migrated to high-capacity, slower tape for deep archive as access frequency falls off.

For applications such as credit card image statements and check image processing which capture images on a daily basis, but generate reports on a monthly basis, a better strategy may be to write image data directly to tape until reports are sent to customers, then migrate data to disk when access frequency increases after customer statements go out.

Document management and imaging can be found in support of business processing applications, such as claims processing in the insurance industry, HR applications (e.g., resume storage and retrieval), or the storing of portfolio information in the brokerage industry.

Each application and industry differs in the data access patterns and required response time to meet expected service levels. A range of technology exists to meet service levels and access patterns. The challenge for users is to match the performance cost with business value.

Where does 36-track tape fit?

Factors to consider when choosing a tape technology include average data set size, data access characteristics, drive performance, controller performance, connectivity options, robotic performance, scalability, application and middleware software support, and cost.

As with disk storage, one size won't fit all. IDC believes 36-track tape will continue to dominate high-end data interchange workloads for the foreseeable future. Applications that require high data access frequency, less than a full volume of data per request and access times of less than 30 seconds remain the 36-track sweet spot, especially when combined with high-speed automation and application-specific middleware supporting access at the data set level and not the volume level.

About the authors

As IDC's Research Director, Asset Management Storage, John T. McArthur provides residual and current fair market value estimates for storage products to leasing companies, equity investors, equipment manufacturers and technology users. He also helps IDC clients develop asset management strategies.

As Senior Vice President, Systems, Software & Storage Research, David P. Vellante directs research activities in the areas of commercial systems and software, which includes storage. He has overseen IDC's examination of critical issues such as the future of enterprise information management.

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Not Another #$!&!$ Survey!!!

By Kathleen Melymuka

It's not that IS execs hate surveys; it's that the surveys are so hateful

What's as offensive as the barrage of telemarketers who always call at dinner time?

It's the information systems survey takers who invade the privacy of the office with their frenetic telephone calls, massive mailers and silly bribes.

"They remind me of the credit-card companies or the people who call you for carpet cleaning on Sunday afternoon," says Rina Delmonico, vice president and chief information officer at Scott Sports Group/Schwinn Bicycling and Fitness in Boulder, Colo.

"I equate them with the telemarketing calls you get during dinner," says Bill Jorgensen, vice president of information services at Proudfoot Co. in West Palm Beach, Fla.

IS executives are beset by these folks anywhere from once a month to several times a week, and they find them annoying and frustrating. They're annoying because the surveys are too long, unfocused, detailed and irrelevant. They're frustrating because (and here's the rub) IS executives would like to help, if only the surveys would address issues that concern them. To the extent that they don't, however, they disappear into the "ignore" box or the round file.

Phone surveys are the most bothersome because they demand immediate attention. "They usually interrupt what's going on," Jorgensen says. "They take too much of my time, and they always seem to come at an inopportune moment."

"They're a waste of my time," adds Steve Kennedy, CIO at The Mattei Cos. in Seattle. "I just don't like to lose focus on what I'm working on."

Surveyors promise to be quick, but then they renege. "Once I told a survey person I had 10 minutes," Delmonico says, "but they kept going on and on. I said, 'I don't have time to finish this.' So someone called me back three times. I finally said, 'That's enough.'"

FOCUS, PLEASE?

Mail surveys can be equally frustrating because many are voluminous and unfocused. "What's most annoying is how much is irrelevant to me," says a director of software development who asked to remain anonymous. "Some will be 40 questions long, of which 10 are relevant. They mix up very technical things with very business-oriented things."

"If somebody is sending me a survey about mainframes and we don't have mainframes, they're wasting my time," Kennedy says.

Surveys sent to CIOs regularly go into levels of detail that CIOs neither know nor care about. "My God," Delmonico says. "Do they actually think CIOs have those technical details?"

They also promise a brevity that they can't deliver. "Some of the information is difficult to extract, and you sure won't get it accurate in anything like the 10 minutes they say it will take," says John S. Hancock, director of MIS at CNR Health, Inc. in Milwaukee.

Despite the problems, mail surveys have one characteristic recipients like. "The one good thing about mail is you can do it when you have the time," Hancock says.

Many IS executives say they wouldn't ignore a survey that was brief, relevant and focused. "If it's a topic I have any interest in . . . I'm more likely to do it," says the director of development. "But more often than not, they're boring."

Yet most IS executives will look at a survey. "I answer about half," Jorgensen says. "It depends on my schedule and whether it means anything to me, whether it's going to accomplish something positive. Salary surveys, for example, are usually important."

"It depends on how long they are," Kennedy adds. "If it's short, I'm usually willing."

Delmonico used to respond, but she's been turned off. "Once they get your name, you suddenly get everybody and his brother calling with surveys," she says. "I don't want to ever do another one because of that."

But if they do take the time to respond, IS people say they always tell the truth.

"Lying never occurred to me," Hancock says. "I wouldn't waste the time."

Still, Jorgensen suspects the truth occasionally may be tempered. "I'm sure there are a lot of egos out there, and nobody wants to admit that they're downsizing or things aren't going well," he reasons.

Delmonico suggests that totally blind surveys received by mail and returned to the surveyor without any information about who filled them out would glean better data. "The telephone is not confidential," she says.

BRIBES WORK – SOMETIMES

And what about the little bribes, such as a dollar bill, that some surveys include to lure you into responding?

"I find them kind of humorous," Jorgensen says. "Sometimes I give the dollar to my staff and tell them to do it."

"I think they're stupid," the director of development adds.

Little bribes sometimes will move a CIO to respond, even if grudgingly. "I feel somewhat compelled to do it after I put the dollar in my wallet, even though I'm acknowledging that my time is worth about two bucks an hour," Hancock says. "If they put a twenty in there, I would find time to do a good job."

Executives say other bribes are more useful than money. "The ones I like are where you get a copy of the survey at the end," Jorgensen says.

And a little creativity goes a long way, as Delmonico reports. One group sent her a different model train piece and some track every week for five weeks until her curiosity got the best of her. "I had to call them," she says. "I said, 'You've intrigued me so much [that] you can meet with me.' And they said, 'Good. That's how you get the engine.'"

The message from IS managers to surveyors is this: Give us a survey that's short, focused and relevant, with a copy of the results to respondents and extra points for creative delivery, and the data will beat a path to your door. □

Melymuka is a freelance writer in Duxbury, Mass.

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BEATING THE 'SYSTEM' ON BEHALF OF CUSTOMERS

Ever get the impression that some large organizations are preying on you?

For instance, the HMO that restricts treatment to maximize its profits and reduce costs to your employer. Or the IRS, which routinely has abused taxpayers to shake out more revenue.

These enterprises operate under perverse incentives. In other words, the metrics by which they gauge their employees' performance are totally askew with the needs and satisfaction of their customers.

IS organizations — traditionally remote from business strategy — often unwittingly automate these pernicious practices. For example, a friend related that his daughter, living on her own for the first time, recently opened a checking account at a large commercial bank. Unaware of check-clearing "floats" and other bank tricks, she almost immediately bounced four small checks. The penalty was $100, which was automatically deducted from her account. That's a lot for a young person just starting out.

The disturbing thing was that the bank had maximized the penalty fees by bouncing the small checks, but cleared one large rent check the same day. Methinks diabolical metrics, supported by networked technology, were in play.

All of us have had similar experiences. But the real point about business metrics is that measurement systems have consequences far beyond numbers. They affect a business's performance, morale, culture, even long-term viability. They also confirm the axiom that people tend to act according to the expectations placed on them.

Thus, if IRS agents were judged by their total tax collections — not on the validity of their accusations against taxpayers — how would you expect them to act? The so-called "Service's" vast databases hummed along in pursuit of the ultimate folly: alienating U.S. taxpayers to the point of revolt. The agency is just now beginning to get it right by no longer counting penalty fees as tax revenue.

How can IS organizations play a role in devising valid metrics and squelching foolish ones? They can at least raise some red flags. Here are a few ideas how:

■ First and foremost, examine how all IT projects affect customers from their point of view. Do it not only from the idea that some clumsy system might outrage them or drive them away, but also from a notion that maybe your systems are being designed more for the company's convenience than a customer's. Why, for example, can't systems at most telephone service centers (or even video stores) recognize us by name, instead of by ZIP code, phone number or those insidious "personal identification numbers." We're turning into a nation of PIN heads for the sake of machines that are more adept at scanning bar codes than recognizing individuals. After all, we're the customers, not some set of electronic dog tags.

■ Determine how sales-reporting, commission or product-delivery systems can hamper, embarrass and finally undermine salespeople and others on the front line. I once attended a rather sad goodbye party at a large company where a former entrepreneur was leaving. His post-acquisition company was being strangled by new corporate financial controls. This was a firm that had operated on a handshake. The company and its customers had a good relationship; they trusted each other. Now its sales force was spending a disproportionate amount of time keying in data for review by corporate types, whose job was viewed as "reining in those cowboys." The ex-entrepreneur — with irony that escaped no one — said he wanted to credit the parent company's president "for taking a firm that was growing at 50% a year and bringing it to where it is today."

■ Study your competitors' systems. How easy are they to do business with? You may discover, by comparison, that your systems actually prevent you from completing transactions. A classic case of a system gone awry was recently experienced by a friend at a doughnut shop here in Massachusetts. Late in the day, he was ravenously eyeing the last seven doughnut holes in a tray. Incredibly, the clerk refused to sell them. The reason? "My computer only allows me to sell them by the dozen." No sale, and my friend left hungry.

■ Finally, understand that your company should stand for something more than the dollars it brings in or the stuff it happens to make at this point in time. For example, is your bank providing mortgage customers with the dignity of home ownership, or is it just in a brutal point-spread game, charging people with late fees and hidden rate rises?

The IRS didn't think its job had anything to do with democracy, and look what happened to it. So, instead of blindly following the primrose path, try a little "flag waving" of your own. □

Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. His Internet address is JimChampy@ps.net. His newspaper columns are syndicated by Tribune Media Services.

RESOURCES: IS MANAGERS' BOOKSHELF

@Large: The Strange Case of the World's Biggest Internet Invasion
By David H. Freedman and Charles C. Mann
Simon & Schuster, New York; $24; 300 pages (hardcover)

This book aims to provide systems administrators, network managers and a general audience with some frighteningly simple object lessons about the dangers — crackers, thieves and mischievous cyberbrats — that lurk on the digital highway. But it falls short as a thriller for general readers, and IS professionals will be disappointed by the oversimplified technological explanations and relative lack of context. All of this keeps it from being a true how-to-thwart-the-hacker guide.

@Large reveals the previously untold story behind what the authors call one of the most frightening computer crime sprees to date. Through a succinct but choppy narrative, the reader learns that from 1991 to 1993, an unknown, undetected 'netizen — Phantomd — seized control of hundreds of computer networks around the world. Before the FBI pulled the plug on his adventures, Portland, Ore.-based Phantomd broke into universities such as MIT, Harvard University and Portland State University; corporate networks such as those at Intel Corp. and Sun Microsystems, Inc.; and military facilities and government agencies.

@Large is tightly edited and written, and it strives to create a strictly facts-only account of the manhunt for Phantomd. But the chapters jump too quickly and disjointedly. There are stories of the systems administrators who nearly pulled their hair out trying to track Phantomd, of the FBI officials who were forced onto the case despite their limited technological knowledge and of Phantomd himself. But these juxtaposed stories lack the cohesiveness that makes for a good page-turner.

@Large includes in the last few chapters a bit of context for the Internet's effect on and uses in the corporate world. It also issues a cautionary word or two for network administrators about firewalls and other possible network security measures.

— *Roberta Fusaro*

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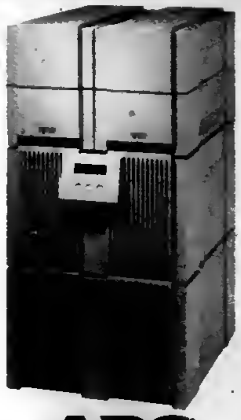

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Buyer's Guide

Group[where]

By Garrett Michael Hayes and Kenneth I. MacLeish

When American humorist Will Rogers said, "If you took all of the economists in this country and laid them end to end, they'd point in every direction," he might have been speaking of groupware vendors as well. The industry view of what is and is not groupware has been redefined several times in the past few years, with "collaboration" being the current buzzword of choice.

To make some sense out of this topsy-turvy landscape, *Computerworld* asked Client/Server Labs to look at several competing products in the groupware marketplace. We tested five products: Domino 4.6 from Lotus Development Corp., Exchange Server 5.5 from Microsoft Corp. (a beta release), GroupWise 5.2 from Novell, Inc., SuiteSpot 3.1 from Netscape Communications Corp. and WebShare 2.1 from Radnet, Inc. At the last minute, Oracle Corp. decided not to participate in our review with its recent Oracle InterOffice release.

TEST ENVIRONMENT

We loaded the server products on a Dell Computer Corp. 4100 dual-processor 200-MHz Pentium server with 256M bytes of RAM, while client-side functionality was tested with a mixture of systems, including 166-MHz Pentium-based Dell OptiPlex GL PCs running Microsoft Windows NT 4.0 and 66-MHz 486-based IBM PC 330s running Windows 95. We tested Web browser functionality using Microsoft's Internet Explorer (versions 3.02 and 4.0) and Netscape's Navigator Gold Version 3.01. For the GroupWise testing, we also used a small 486 server running Novell's IntranetWare 4.11 to provide Novell Directory Services (NDS). Communications were over 10Base-T Ethernet, using TCP/IP for the Windows NT communications and both TCP/IP and

Group[where], page 88

Group[where]

CONTINUED FROM PAGE 87

IPX/SPX for connections to the NetWare server.

We tested for installation, administration and developer functions on the server as well as remotely, where available. End-user testing was conducted by a staff group simulating a workgroup, using the tested applications to communicate, schedule and share information on an ad hoc basis. We focused our view on those aspects of the products that were keyed toward making information available over the World Wide Web.

Overall, we found that groupware is defined less by a type of product than it is by an idea of how people in a given organization happen to work together. Despite some vendors' desires to field products that are "enterprisewide" in nature, users' needs remain largely defined at the working group level.

For instance, though marketing, graphics and quality control might exist in the same enterprise, each has very different needs.

VENDOR/PRODUCT	CONTACT	PRO	CON	BEST FIT
Lotus' Domino 4.6	www.lotus.com	Broad multi-platform support	Difficult to configure and maintain	Medium-size to large shops or those with multiple platform needs
Microsoft's Exchange Enterprise Server 5.5	www.microsoft.com	Uncomplicated installation and maintenance	Only one server platform supported	Homogeneous NT Server shops
Novell's GroupWise 5.2	www.novell.com	Tight fit with NDS	Tight fit with NDS	Existing NetWare shops
Netscape's SuiteSpot 3.1	www.netscape.com	Totally Web standards-based	Piecemeal approach	Shops with need for only some functions or a need to split components
Radnet's WebShare 2.1	www.radnet.com	Tools for rapid development and deployment	Single piece of the puzzle	Shops with existing Web infrastructure and existing messaging or no need for messaging

THE PRODUCTS

Microsoft's Exchange Enterprise Server 5.5

(beta release)

List price: $1,939.95 (includes server and 25 licenses)

Overall: The easiest to install, configure and field. Despite documentation claims of working equally well with any browser, the Web stuff works best using Internet Explorer.

With the pending release of Version 5.5, Exchange Server is beginning to mature nicely. Microsoft has certainly streamlined several points of the installation, including automatically configuring the standard entries needed to manage Internet access. Handlers for the standard Internet protocols such as Post Office Protocol (POP), Internet Message Access Protocol (IMAP) and Hypertext Transport Protocol (HTTP) are automatically loaded with default configurations in place. The Simple Mail Transport Protocol (SMTP) connector for Internet mail requires only a few pieces of information to be up and running, unlike previous versions, which required fairly detailed configuration.

Microsoft has taken good advantage of the fact that its product runs in a single, homogeneous environment, especially in the area of Web server integration. The product requires the installation of Microsoft's Internet Information Server (IIS) with Active Server Pages to be able to provide Web access to the Exchange information stores. However, given that platform, the integration is essentially seamless.

The Web browser-based version of the Outlook client looks and acts very much like the slightly revved dedicated client (Outlook97) that comes with the Exchange server.

However, this led to a problem for some of our end-user testers. One user, familiar with the dedicated client, became confused when the Web-based version didn't do some things she was used to seeing, such as automatic screen updates after sending a message or scheduling an appointment. We also weren't able to get Navigator to bring up the Web-based Outlook emulator successfully.

The simple addition of user rights to the permissions screens in the standard Outlook client also allows the viewing of public folders by Web clients, including anonymous access and the ability to use the public folders as online discussion groups, if desired.

Configuring users to retrieve electronic mail via POP3 or IMAP was also quite simple to do. We were able to send and receive mail by either protocol within a few minutes of installing and starting the server.

The only major problem we encountered was when, late in the testing cycle, the creation of new mail messages through the Web interface began to fail. Microsoft technical support determined that the problem was the result of a damaged file, but time constraints didn't allow us to restore the file and retest that function.

Users can automatically configure standard entries needed to manage Internet access in Exchange 5.5

GroupWise 5.2 offers nice calendaring features, but installation and configuration was trying

Novell's GroupWise 5.2

List price: $2,489.95 (includes server and 25 licenses)

Overall: Some good features and functions, but getting them all to cooperate isn't easy. The continued need for NDS will probably keep this a niche product (in existing NetWare shops, for instance).

GroupWise brings some interesting features to the table, including nice calendar functions and one of the better jobs of mimicking its dedicated client with a Web interface. The experience was marred, though, by the fact that GroupWise was the most intractable of the products to install and configure.

In our test, we chose to install most of the services for GroupWise to run on the NetWare server, seeking to create the greatest consistency of environment possible. Unfortunately, that turned out to require the downloading of multiple NetWare patches from the Internet, as well as no less than seven reboots of the NetWare server before we finished.

The dedicated GroupWise client seems little changed from previous versions, carrying forward its model of the information world centered on the concept of a "universal mailbox." As with Microsoft Exchange, the view is that message transportation is the core of information sharing. The most visible changes are in the parts of the product designed to carry

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information across the Internet.

Installing and configuring the various pieces to run NetWare's Web Server and the necessary gateways and agents was cumbersome at best. Novell continues to view the installation process for a given product as a series of individual tasks, as it did with previous versions of NetWare and GroupWise. Especially irritating was the fact that, although GroupWise requires an NDS server for "single point management," we still had to configure separate passwords for each user to connect via the Web, in addition to their usual networking passwords.

In Domino Server 4.6, Lotus bundles the setup of key Internet pieces

Once configured, the Web version of the GroupWise client was impressive in its fidelity to the dedicated version. Our end-user tester who had been confused by Exchange's Web client (even though an experienced Outlook user) was very pleased with the clarity and responsiveness of the GroupWise Web client, despite her lack of familiarity with GroupWise.

POP3 and IMAP support are also available and seemed fairly easy to deploy once the base system was configured.

Lotus' Domino Server 4.6

List price: $1,482 (includes server and 22 licenses)

Overall: Still the Cadillac on the lot (and the land-yacht simile may well apply: The program takes up a lot of space and is slow to maneuver). The multiplatform nature continues to make Domino and Notes appealing to large organizations but may also keep the products out of the mom-and-pop market Lotus wants to penetrate.

Domino won our "Most Improved" award for its installation program, which has been reduced from a complex series of screens to a four-step Web browser process with simple option selections. Unfortunately, it falls short at the end of the process, giving the installer three paths by which to exit the installation (go to the Notes workspace, start the Domino Server or register users) but offering no guidance as to which path should be taken in which circumstance.

Like Microsoft, Lotus has done an excellent job of bundling the setup of the key Internet pieces, which had previously been add-ons. The installation of such items as the POP3 services or the SMTP Message Transfer Agent are now handled with just a mouse click during the setup. However, such things as configuring new users are still somewhat more complex than we liked. We were especially surprised to see that this version didn't add Notes user configuration functions to the NT User Manager as had Version 4.5. The default items, which those utilities plugged in to a newly created user record (such as server and domain names), were sorely missed.

Unlike Microsoft and Novell, Lotus has made no particular effort to emulate its dedicated client through a Web browser. Instead, most of the information is presented through the Web interface in a straightforward tree and list-oriented fashion, almost at the level of what one is accustomed to seeing on a file transfer protocol server. It isn't glamorous, but it made for fast retrievals.

Access to shared discussion databases is also provided through both the Web interface and Network News Transport Protocol (NNTP) connections. The browser-based representation was sophisticated enough that we preferred it to the news readers we used. The difference in presentation between the Web-based mail and the Web-based discussions seems to be that Lotus has set out to make things visually attractive to visitors but simple and rapid for regular users, a philosophy we liked.

The one major problem we had was getting Domino to respond correctly to user authentication requests from Web-based clients. That configuration step proved somewhat trickier than we had hoped. As it turned out, the user names with which we tested this had never connected from an actual Notes client and thus hadn't been given permission to access their own mail database files.

Netscape's SuiteSpot 3.1

List price: $3,495 (includes server and 50 licenses)

Overall: The component approach may have some market appeal, but we found it somewhat confusing. Trying to figure out in what part of the "suite" you accomplished various goals was sometimes fuzzy.

Netscape's SuiteSpot represented a significantly different view of the groupware marketplace from the other products we tested. Essentially a collection of separate Internet applications, SuiteSpot provides a component approach to services. That allows a company to field only those elements it wants, which, for some, may be a great benefit. We found, however, that it also generated significant confusion.

The SuiteSpot Standard Edition package we tested included the Enterprise Server, Calendar Server, Messaging Server, Collabra Server and Netscape Directory Server. The integrated Web browser-based management provided with SuiteSpot went a long way toward easing some of the potential woes of managing such a group of disparate applications. Netscape has done a good job of encapsulating the various elements into one central set of functions. The only drawback is that, in tailoring the administration to a Web browser by keeping individual windows and functions small, there is less continuity than we have come to expect in an administration utility.

The administration utility can be configured to allow distributed administration (where different portions of the system may be located and administered on different systems), and the Web-based administration can be set to accept commands only from specified hosts. That was less than ideal in two ways. First, we managed to accidentally lock ourselves out of administration access from the server itself. Second, because we had logical access to the NT server, we were able to remove that security in a matter of minutes.

Netscape's Collabra Server portion adds discussion capability to the suite

Central to the suite, the Directory Server provides a centralized Lightweight Directory Access Protocol (LDAP)-compliant service for maintaining the list of authorized users. Messaging Server provided standard IMAP server, SMTP and POP capability, which functioned out of the box quite well.

We were most interested in the Collabra Server, which adds discussion capability to the suite. Essentially an NNTP-compliant newsgroup server, Collabra allowed us to create both established and user-defined discussions (newsgroups), with access control based on the LDAP user list. Security features included the options to use SSL Encryption, basic user/ID authentication or X.509V3 certificates.

Radnet's WebShare 2.1

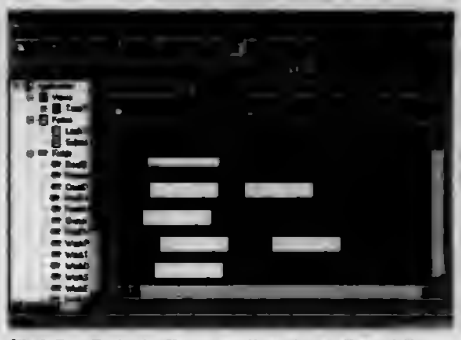
List price: $2,995 (standard server for NT, including designer and unlimited clients)

Overall: Very interesting add-in product. Definitely not in the same league as Exchange, GroupWise, Domino (and doesn't try to be), but allows rapid development of Web-based applications.

Radnet is a young company and not yet a household name, but WebShare 2.1 was one of the most smoothly installed and used products we worked with in our testing. While much of that ease of use came from the fact that it is handling only one discrete portion of the groupware puzzle — distributed database applications — much of it must also be credited to basic good design and a useful set of tools.

On the flip side, Radnet needs to make some small but significant improvements in documentation and sample application issues to be successful in its target market.

WebShare 2.1 is an add-in designed to be used with an existing Web server and messaging infrastructure. When combined with other products such as Netscape Enterprise Server or Microsoft's IIS and almost any E-mail package, WebShare scripting tools allow a developer and an administrator to create applications that enter and retrieve information from SQL databases on the same or a connected server. The separate WebShare Mobile component allows application data to be replicated onto a remote system (such as for a field salesperson) and then uploaded back to a host system at a later time.



Fledgling Radnet offers one discrete portion of the groupware puzzle

In our testing, we used WebShare with Microsoft's IIS and Exchange run-

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Group[where]

CONTINUED FROM PAGE 89

ning on our server and with Internet Explorer (versions 3.02 and 4.0) and Netscape's Navigator Gold 3.01 on our client workstations. For our database engine, we used the Sybase, Inc.'s SQL Anywhere license, which is included with the WebShare product.

One of our administrative-level testers set out to create a small application to capture employee time records. Our tester was astonished to find that, with virtually no knowledge of SQL, he was able to create, install and use a simple two-screen application for entering and retrieving time data in only about two hours. Performance with both the Explorer and Netscape browsers appeared identical. Although the result wasn't nearly as attractive as the sample applications supplied by Radnet, it did the simple things we asked of it.

That, however, raised an interesting conundrum. In our end-user sampling, some of our testers found that the sample applications (such as the problem-tracking application) were so visually interesting that their functionality wasn't immediately obvious. We would have liked to have seen a stripped-down application as a sample for both teaching users and modeling entry-level applications.

There was also a lack of any simple installation guide in the otherwise well-thought-out manuals. That, combined with the absence of a standard setup program, lured us into installing components in the wrong place the first time we attempted to field the WebShare Mobile components.□

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COMPUTERWORLD

For more articles and resources on groupware, visit our World Wide Web site at www.computerworld.com/news.

Analyst Sneak Peek

"Something starts out really small, but you can't see it. Then it grows to be something that's really big and extremely important. Then it becomes so big that it's ubiquitous and no longer visible anymore," says Eric Brown, a senior analyst at Forrester Research, Inc. in Cambridge, Mass.

Just what is he talking about? The lifecycle of groupware, of course.

"In five years, will I even think about a category of product called groupware? I don't think so," Brown says. "I think it will be an aspect of development on applications."

Groupware applications and transaction applications will blend and become convergent applications. "They'll just be apps," Brown says. "People won't think about adding collaboration, a sense of community and rich content to an application as a special or strange thing. It will be a natural part of applications."

To Gene Phifer, research director at Gartner Group, Inc. in Stamford, Conn., the groupware arena will be affected the most by network computing. "Network computing will change groupware because of different access mechanisms, different paradigms for access, the whole bringing in the network computer model, which is really the next step in the client/server model," Phifer says.

Network computing will drive a lot of the architectural decisions that groupware vendors are going to be making, and they will start to adopt around that, he says. In the long term, the outcome will be "lots of vendor shake-ups, lots of changes, lots of confusion on the part of the users," according to Phifer.

In terms of market share and dominance, the analysts put Exchange from Microsoft and Lotus' Domino in the lead, followed closely by Netscape's SuiteSpot and Novell's GroupWise. Others in the collection of products include relative newcomer Radnet's WebShare, which allows rapid development of Web applications. Oracle's InterOffice is also available, but analysts don't think it will grab much of the overall market because it's a niche product.

"Domino fits into IBM's application developments"

Here's a rundown of what the analysts say about the vendors:

▸The leaders

"We'll see **Netscape, Microsoft** and **Lotus** essentially come to functional and architectural parity by year-end 1998," Phifer says. He predicts that Netscape will add functionality from an Internet standards perspective; that Lotus will have the groupware environment, adding the Internet standard on top of that; and that Microsoft will have a little bit of both, adding functionality as well as a standards compliance.

▸Microsoft's Exchange

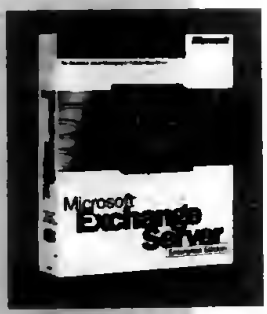
"From Microsoft's standpoint, Microsoft Exchange is part of BackOffice," Brown says. "When they talk to developers, they don't try to woo people into becoming Exchange developers. They convince them to become BackOffice developers, of which Exchange is a component."

▸Lotus' Domino

"Each of the [groupware vendors] has to understand how they fit into a broader distributed application development platform," Brown says. "Domino knows how it fits. It fits into IBM's application developments."

▸Netscape's SuiteSpot

"Netscape constantly challenges the traditional guys in terms of standards adherence and innovation around the Internet," Brown says. "But at the same time ... they're growing so fast, that I think in the next 12 months, the burden on them is to stop innovating on features and tighten up the quality of the products that they ship."



"Microsoft Exchange is part of BackOffice"

▸Novell's GroupWise

"GroupWise is a product with a tremendous amount of end-user feature functionality," Brown says. But according to Brown, the company was very late in recognizing the more bread-and-butter requirements of Internet standards and scalability and all those things that have been the real competitive dialogue in the marketplace. "They kind of got left behind and they're in a position of playing catch-up," Brown says.

▸Oracle's InterOffice

"When you think of Oracle InterOffice, you typically see it in environments in which Oracle's already there ... it's an accessory in an existing Oracle database," Phifer says. For that reason, he says users outside of an Oracle environment wouldn't be likely to choose InterOffice.

▸Radnet's WebShare

"We list Radnet pretty low in both the ability to execute and completeness of vision," Phifer says. "They're in the niche player category."

"I think Radnet is biting off a segment of the market that has to do with good-enough software for rapid tactical deployment. ... It's lightweight, easy to deploy, it's server-based both in development and runtime," Brown says. "But similarly, there is a sense in the marketplace that these application runtime platforms are getting buried more and more into the operating system," Brown says. — Cathleen A. Gagne

In Depth

PILLAR of the Community

By Gary H. Anthes

CARY, N.C. — Jim Goodnight parks his clunky old station wagon — the kind with the fake wood panels — and leads the way into a seemingly deserted warehouse. Striding rapidly through the gloom, he pushes his way through an unmarked door.

Inside, frosted globes on a 16-foot ceiling send light ricocheting off cut glass, polished leather and Brazilian rosewood inlaid with brass.

At one end of the grand chamber stands a pipe organ, holding scores by Beethoven, Mozart and Haydn. On the walls, separated by elaborate tapestries, hang works by da Vinci, Raphael, Rubens and Titian. The room is bursting with trophies, marble statues on pedestals and elegant brass-framed cases holding a stunning collection of seashells.

"We are in the Grand Salon of Captain Nemo's submarine *Nautilus*," announces Goodnight in a slightly bored tone as he skirts a giant clamshell made into a fountain.

James Goodnight built SAS Institute, and much of the town it lies in, according to his strict standards. All concerned are prospering

A reporter gapes at the lavish furnishings, but it's the floor that Goodnight apparently finds most noteworthy. "See the little red lines? Our cameras have laser beams that track these as they move through the room," he says.

It's hard to believe — here at a virtual 20,000 leagues under the sea — that one has arrived at the corporate campus of software maker SAS Institute, Inc., where Goodnight reigns as president, CEO and much more.

Indeed, Goodnight is a bundle of contradictions. An intensely private man, he has made several high-visibility moves in the local community, where the $700 million software company is the dominant economic force. Earlier this

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PILLAR

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year, he bought Midway Airlines when its financial difficulties threatened service to the area. And unhappy with overcrowding and weak curricula at local schools, he spent $10 million of his own money to start the private Cary Academy.

Goodnight can be gruff, taciturn and a bit intimidating, but his employees say the six-foot-five-inch chief executive has a heart of pure gold. He has rolled out an extraordinarily generous suite of benefits — from free M&M's every Wednesday to live piano music in the heavily subsidized SAS cafeteria to free laundry service in the SAS fitness center.

SAS has two subsidized on-campus child care centers and a free health center that is staffed by two doctors and six nurses and features a bank of massage rooms for "stress therapy." A full-time ergonomics specialist helps new employees choose furnishings, and an artist-in-residence paints pictures to hang in the 19 buildings on the 200-acre campus.

> He's built himself a vertical operation — SAS, from cradle to grave.
> Ron Kupferman
> Global Software Inc

Pressed to justify this largess in terms of productivity or turnover rates, the former statistics professor merely shrugs. "I like to be around happy people," he says with characteristic lack of embellishment.

He pauses, then adds, "But if they don't get that next release out, they're not going to be very happy."

LARGE AND PRIVATE

SAS products capture, store, manipulate, analyze and present information. SAS started with statistical tools, but it's now heavily into data warehousing, data mining and executive information systems.

The largest private software firm in the world, it has an annual turnover rate of less than 5%, compared with more than 20% for the industry as a whole. SAS was recently named one of the 10 best companies in the U.S. by *Working Mother* magazine, and it was listed fourth in *BusinessWeek*'s 1997 Work and Family Survey.

Goodnight doesn't stint on research and development, either, plowing back a third of revenue into R&D. In an analysis three years ago, *Computerworld* found that SAS spent more on R&D as a percentage of sales than any of the 50 top software companies — and 2.5 times the industry average.

The makeup of the company's R&D is determined largely by its 3.5 million users, who submit annual ballots indicating where they would like to see product improvement.

But the 54-year-old Goodnight, who calls himself "one of those introverted programming types," concedes that SAS's extraordinary emphasis on product development reflects his own interests and values.

He complains that recent press interviews and speaking engagements, which he freely admits he hates, have kept him from his goal of spending half his time programming. Asked what the company's software testers say about his handiwork, he says with a laugh, "I have the best-quality code in the company."

That boast may not be far off the mark, says John Sall, who with Goodnight and two others founded SAS in 1976. "Jim was a very good programmer," recalls Sall, now a senior vice president. "He was the most careful of all of us, and his stuff usually worked the first time."

As a teenager, Goodnight stocked shelves in his father's hardware store and then worked his way through North Carolina State University by moonlighting as a programmer.

The billionaire businessman now owns two-thirds of SAS; Sall owns the balance. The other two co-founders sold their shares years ago.

HANDS-ON

The spotless desk in Goodnight's office and his claim that he works "9 to 5" hint at a man who is good at delegating. But he's hardly a hands-off executive. Asked about a report that he designed SAS's numerous buildings, Goodnight says, "I draw a rough sketch and I pick out the site, and that's about it." A pause, a smile, and he adds, "Until I walk in and say, 'God, that's ugly — change it.' "

Goodnight encourages employees to pursue their own ideas for new products. "At some point, I'll be asked to look at a prototype," he says. "If I like it, they get more people. And if I don't, they usually continue working on it behind my back."

Goodnight did the pioneering programming for SAS's new CFO Vision, a financial reporting and data warehouse product. His code got a fledgling development group "over the holes they were having in data consolidations," he says.

> I don't want to spend the rest of my life talking to analysts and reporters
> - James Goodnight

Having gotten that off the ground, Goodnight is launching another "skunk works" project to develop a new front end to the SAS system. "I found some extra space in the basement of Building S," he says. "I've got an office over there now, and I'll be mostly in S for the next six months."

Goodnight's zeal for innovation recently led him to start a new company, SouthPeak Interactive, that has found a way to combine video-quality realism and freedom of movement in computer games.

PAUL DAGGETT

> I like to be around happy people. But if [SAS employees] don't get that next release out, they're not going to be very happy. - James Goodnight

When SouthPeak introduces "20,000 Leagues: The Adventure Continues" a year from now, users will be able to walk those red lines through Jules Verne's *Nautilus* and view the Grand Salon from any angle.

Goodnight's 250-pupil Cary Academy boasts almost one computer per student, an intranet and a T1 Internet connection. But Goodnight says that technology won't be the key to the school's excellence. "That guy Clinton wants to wire up all the country's schools," he says. "Big deal. That won't accomplish anything without curriculum."

So SAS is developing curriculum for Cary Academy in the form of interactive, multimedia software.

The software will ship with content developed by subject-matter experts, such as historians, employed by SAS. Goodnight says he'll give the materials to Cary's public schools for free.

There could be some fence-mending in that move. The outspoken Goodnight drew considerable heat when he said publicly that the local schools had been "dumbed down," and again when he hired away some of the best and brightest teachers for Cary Academy.

Goodnight has invested millions in Cary real estate — including a country club, housing developments and a hotel — all offered at discounts to SAS employees. He has spent millions on road and sewer improvements in the areas touched by SAS. He donated land for a fire station and designed it to harmonize with nearby houses. He bought bicycles for the Cary police in order to get them closer to citizens.

"I could go on and on and on," says Koka Booth, the part-time mayor of Cary and a community relations specialist at SAS.

Booth admits to getting some heat for wearing both Cary and SAS hats, but he insists that he abstains from all Town Council votes on matters of interest to SAS.

"[Goodnight has] built himself a vertical operation," says Ron Kupferman, CEO of Global Software, Inc. in nearby Raleigh. "He hires someone, and his real estate company can build a home for them, they can belong to his country club, and the kids can go to his Montessori schools. It's the complete environment — SAS, from cradle to grave."

But Howard Johnson, president of the Cary Chamber of Commerce, says the community is in Goodnight's debt. "He has contributed in every way: employment, taxes, education, recreation and leisure, arts and culture. We are truly grateful for each of those."

And *The Wall Street Journal* says of the town, "Cary presents a remarkable case study in suburban emergence. This one-time sleepy outskirt of Raleigh has become *the* suburb of choice."

NO MAGIC FORMULA

Goodnight hasn't ruled out the possibility of a public offering of SAS stock. But he says, "I do have a bias against that, because I don't want to spend the rest of my life talking to analysts and reporters."

Asked for the secret of growing a company from scratch to $700 million with no external financing and famously happy employees and customers, Goodnight insists there's no magic formula. But, he offers, "I will not let us spend more money than we bring in. It's just that simple. If I can keep revenues growing faster than expenses, that means we are going to be OK."

But Goodnight admits to having made mistakes, mostly acquisitions that didn't pan out.

"I've got some huge holes out in the woods," he says in a recent television interview. "I've got $3 million holes, $5 million holes. But you've got to be willing to leave them and just walk away."

But isn't Goodnight terribly proud of his accomplishments at SAS? "I guess I am," he shrugs. "I never really stopped to think about it." □

Anthes is Computerworld's senior editor, special reports. His Internet address is gary_anthes@cw.com.

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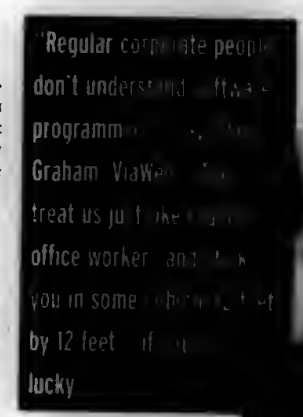
IT Careers

Super PROGRAMMERS

They're the programmer talent you'd sell your mother for. Too bad they wouldn't be caught dead working for you. Here's why.

By Joseph E. Maglitta



Most companies would kill to get a programming whiz like Paul Graham. At 30, he's handled major software development projects at the U.S. Department of Energy and Du Pont Co. He holds a doctorate in computer science from Harvard University. He wrote one of the first parametric computer-aided design programs and two books on LISP programming.

Unfortunately, your company will probably never get a shot at him.

After graduating from Harvard in 1995, Graham decided the action wasn't in coding for large organizations but in electronic-commerce software. So he and some fellow Harvard programmers leveraged their connections and founded ViaWeb, Inc. in Cambridge, Mass. The year-old company, housed on the top floor of a funky orange and yellow three-decker house in Harvard Square, produces software that lets end users build and maintain online stores.

"As a good programmer, you might get a salary of $100,000 a year," says Graham, a Cornell University honors graduate who honed his visual design sense studying painting at the renowned L'Accademia in Florence. "But if your software start-up kicks butt, it will pay $30 million. The ultimate measure of how good a programmer is is the market."

Many of the best and brightest young software developers feel the same way. Don't take it personally, but these programming superstars don't want to work for you — even if you could find them and afford them.

Thanks to a booming economy and three-figure hourly rates for temporary programmers, many of today's rising software hotshots shun traditional information systems organizations. Most are under 30 males. Their wants: the big money, satisfaction, freedom, challenge and growth offered by software entrepreneurship, self-employment or contracting.

But the biggest motivator for many up-and-coming programming stars is the chance to do high-impact work with exciting new technology. And it's precisely that perceived lack of excitement, recognition, passion, self-determination and fun that keeps them out of traditional IS environments.

Who can blame them? Six recent surveys of 1,700 companies by Advanced Technology Staffing, a placement firm in Redwood City, Calif., found that workers in IS shops make 35% less than counterparts with the same skills in consulting and professional service

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©David Sabin

Super PROGRAMMERS

CONTINUED FROM PAGE 95

firms, according to Advanced Technology President and CEO Dominique Black. Independent contractors, the firm says, can earn 50% more.

IS recruiters say top contract rates go to data and network architects, project managers, lead analysts and lead programmers who work on mission-critical projects, especially electronic commerce, re-engineering and global expansion. "Right out of college, these kids who do Java and Internet development can get $75 an hour," marvels Greg Netland, president of New Boston Systems, a temporary IS placement agency in Woburn, Mass.

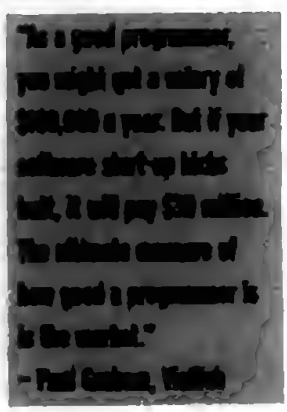
Experienced hands can do even better. Boston-area Java developer Edward Barron, 29, for example, won't take contract jobs for less than $100 per hour. "Plus," he says, "you can do all the fun stuff and not stay around debugging and other painful stuff."

And contract earnings of $150,000 or $200,000 per year don't begin to compare with what a superstar programmer can make heading a software company.

A long line of gifted programmers and techno-geeks has eschewed big-company data processing for entrepreneurship, of course. What's different today is that the biggest economic boom since the 1960s and the technology explosion have made it much easier for would-be entrepreneurs and consultants to bypass IS shops.

"I've never seen anything like it," says Gary Walden, director of IS at Trimble Navigation Ltd. in Sunnyvale, Calif., and a 20-year IS veteran. "I've got 3Com equipment I can't install because 3Com hired away my last network engineer. From a job market point of view, it's incredible."

Such hot competition hasn't escaped the notice of programming stars. A couple of years ago, Vinay Kumar, a young Stanford University computer science Ph.D., was offered what was considered a plum job at Netscape Communications Corp. Though Kumar was penniless and programming in his small San Francisco Bay-area apartment, he didn't think the work sounded rewarding enough. He declined.


"As a good programmer, you might get a salary of $100,000 a year. But if your software start-up kicks butt, it will pay $30 million. The ultimate measure of how good a programmer is is the market."
– Paul Graham, ViaWeb

Kumar still works from his living room. But now he's president and chief technology officer of Icast Corp. in Los Gatos, Calif., with 10 programmers who work beside him making interactive Internet multimedia products. Among the early customers for the year-old venture-funded firm are SegaSoft, Verifone, Inc. and North Carolina State University. Like many programming wunderkinds, Kumar never considered working for a traditional IS department. "I've really focused on doing my thing," he says. Even after working 80-hour weeks and losing his girlfriend and social life for the past two and a half years, he's still passionate. Such energy and sacrifice are typical.

When it does appear, interest in a corporate IS career can be fleeting. As a Harvard senior majoring in computer science, Sanjay Madan did obligatory campus interviews at Goldman, Sachs & Co. and other big names before he graduated in 1995. But Madan, an honors student and programming virtuoso, says he found the conventional jobs "unchallenging."

"People in IS were talking to me about fixing year 2000 bugs," says Madan, 23. "That kind of work is not as appealing."

Certainly not as appealing as being president of Link Exchange, a year-old San Francisco company that bills itself as "the Web's largest and fastest-growing advertising network." At last count, the network boasted more than 300,000 member sites displaying more than 5 million rotating ad impressions daily.

Link's executive vice president and co-founder is Tony Hsieh, also 23 and a Harvard classmate of Madan's. Within a year of graduation, the pair had obtained $3 million in venture capital and started Link Exchange. Today, the company employs 20 under-30s in a converted warehouse in San Francisco's "Multimedia Gulch."

"We figured out that the big corporate world wasn't for us," Hsieh says. After a year in business, the pair has started drawing salaries. Madan says they earn less than they'd make as top company programmers, "but what drives us is owning the stock."

Any university can offer similar tales of top programming talent, especially from computer science programs, who are more excited by IPOs than IS.

Consider Matt Curtin. Still under 30, he's a development director's dream. He knows a dozen programming languages, wrote his own Internet gateway and pager software and runs a half-dozen Internet workstations at home. Four years ago, Curtin worked as a programmer at a data processing company. The Internet was just getting popular, so he wrote code that let users view World Wide Web data dynamically and intelligently "without having the mainframe people take two weeks to generate the same thing."

The reaction? "They didn't get it," Curtin smiles, "so I left." After a programming stint at Bell Laboratories, Curtin is chief technology officer at Megasoft Corp.

"Regular corporate people don't understand software programmers," Graham says. "They treat us just like regular office workers and stick you in some cubicle 12 feet by 12 feet — if you're lucky."

So ViaWeb strives to create a "hacker environment" for its 20 employees. "It has to be the same atmosphere as graduate school. Nobody gives a damn about your haircut, how you dress or when you show up," Graham says. Graham's new (and only) business suit hangs in a company bathroom. "It's kind of like a false beard," he chuckles. "I put it on when I have to, then take it off."

The chance to constantly learn new skills also diverts top talent from IS shops. Many contractors, consultants and software entrepreneurs say career growth and the excitement of learning new technologies is a huge driver. "Contracting is a very good educational process," says Rasta Mansour, 31, a veteran contractor and consultant. "You meet a lot of very bright people."

Since leaving a job as a senior programming analyst at McDonnell-Douglas Corp., Mansour has worked at nearly two dozen companies, including IBM, US West, Inc. and Sybase, Inc. He's now on a two-year assignment prototyping global package-tracking systems for DHL Systems Information Processing in Burlingame, Calif., and learning BEA Systems, Inc.'s Tuxedo.

Beyond on-the-job training, most IS hotshots accept constant study and technological awareness as a necessary investment to maximize income. "I read everything I can get my hands on," says Thomas C. Lamb, a contract programmer in Salt Lake City. He also listens.

"I know I'm good," Lamb says. "But I learn things from people whose skills I consider myself way beyond." □

Maglitta is a freelance writer in Cambridge, Mass.

Star Search

Tips for hiring, keeping or becoming a superstar programmer

Corporate IS managers:

★ CREATE OPPORTUNITIES FOR IMPACT AND LEARNING.

Top programming talent isn't religiously opposed to working in IS. It's just that, rightly or wrongly, your image is god-awful. Or worse, nonexistent. Many young stars see corporate programming jobs as routine and boring. They fear working for a humorless bureaucracy that will silently swallow their anonymous work. It's easier said then done — and you might not be able to do it at all — but anything you do to structure jobs and projects for maximum visibility and learning will boost your chances immeasurably.

★ SEDUCE CONSULTANTS.

Often it works the other way — outsiders pilfer your stars. Borrow a trick from Silicon Valley: Lure promising junior talent with well-paying contracts. Within a year, offer them guaranteed fast-track direct jobs. Sybase and others use that approach with success, says veteran consultant Rasta Mansour. "It works well with the low end of the talent base," he says.

★ DON'T BE TOO CORPORATE.

Young code stars hate being treated like accountants or purchasing agents. They scoff at how poor many organizations are at creating an environment they find comfortable. Flexible hours, bigger spaces (not teeny cubes), looser dress codes and looser in general will be a lot more attractive to talent seeking a hacker culture. Read about the early days of Apple Computer, Inc. and Lotus Development Corp. for examples.

IS professionals:

★ LEARN SOMETHING EXOTIC — AND KEEP CURRENT.

Internet anything raises your stock quickly. (You know, you know. But what have you done?) And learn some exotic (that is, lucrative) skill. Take Thomas C. Lamb, a contract programmer in Salt Lake City. Besides skills in C++, Visual Basic and other new staples, Lamb recently learned Borland International, Inc.'s Delphi (a "truly visual" language, he says). Result: Instant authority in a rare area.

★ FOCUS ON HOT INDUSTRIES.

In many places, anyone who can spell "code" can make decent money. But if you aspire to true stardom (and rewards), concentrate on "future-oriented industries" that must have killer systems, says Jay Rosenfeld, vice president of technical practices at Comsys Technical Services, Inc. in Houston. High-tech, banking/finance, medicine, telecommunications and manufacturing are strong bets. And don't overlook obvious geographic hot spots: Boston/Route 128, Research Triangle in North Carolina, Silicon Valley, metropolitan Washington and up-and-comers such as Austin, Texas, and Naperville, Ill. Compensation of $100,000 to $200,000 is common on both coasts, Rosenfeld says. Expect slightly lower salaries inland. A little travel can help you find the gold. □

FOREIGN TOUR of DUTY

By Jill Vitiello

An overseas assignment can be the ticket to ultimate success for a high-level IS pro. **Katherine Holland** *is counting on it, as she prepares to call Tokyo her home.*

Aggressive IS professionals charting their career paths know an international stint can be a ticket to the executive suite. A case in point is Katherine Holland, well-known in information technology circles for her outspoken leadership.

Holland was a rare female chief information officer at PECO Energy Co. in Philadelphia — until she was promoted to senior vice president of business services and the CIO began reporting to her.

Now she's packing her bags for Tokyo. Holland recently was scooped up by IBM Global Services. She leaves for Japan early next month as vice president in charge of business development for Asia Pacific.

"I am very ambitious, and I want to run a very large, very significant company one day. My best shot at achieving what I want was to accept a job offer overseas," Holland says. "IBM is a leader in information technology. The company has a broad base and global recognition. I wanted an international arena, and Asia Pacific is the largest growth market."

American companies generally send only high-level information systems professionals abroad to represent them. They look for experienced managers with proven track records of using technology strategically to solve business problems or to create business opportunities. Companies also want IS pros who possess strong people skills in order to build relationships with potential employees, customers and peers in government and academia.

There are risks. Companies don't always guarantee a job with the return ticket. Some Americans don't adjust easily to foreign cultures and come home early. Even so, many professionals view the experience as the attainment of a personal dream and a major resume-enhancer.

Here's a sneak peek at one IS executive getting ready to start such an assignment.

HOME AWAY FROM HOME

"I'm thinking about two things right now," Holland says. "First, I want to make sure that my current responsibilities are covered. Success is when things continue smoothly or get better after you leave. Second, I'm thinking of all the things I have to do to get settled in Japan so I can focus on my new job."

According to Holland, IBM is very experienced at managing foreign assignments, and the company is handling all the details related to visas and other official documents that will permit her to work and live in Tokyo with her husband, a university professor. The couple travels abroad frequently, so they're up to date on inoculations. Before they leave the U.S., they'll get dental checkups, eye examinations and physicals to ensure that they're both in good health.

TAKING CARE OF BUSINESS

When Holland arrives in Tokyo, her first order of business will be to lease an apartment and then get to work. One benefit for Americans working in Japan, she says, is that business is conducted in English. "I can be immediately productive in that culture."

Holland is aware she may have to adapt her "boisterous" American behavior to suit the Asian culture, but she isn't worried about facing barriers as a businesswoman abroad.

"Asians are respectful of seniority, and they accept you for what you are in your position with the company," she says.

In preparation for her journey, Holland went online to order books about living and working in Asia and to locate resources for brushing up her foreign language skills. Ten years ago, she took a six-week course in Japanese in preparation for a business trip to Asia.

"I wanted to be courteous and exchange pleasantries in Japanese," Holland says. In the three years she expects to be in the Asia Pacific region, it'a likely that Holland will learn a lot more than "konnichi wa."

Her decision to accept the assignment overseas is part of a career plan that she believes will lead her one day to be CEO of a major corporation. "This is a terrific opportunity — the dream of a lifetime," Holland says. □

Vitiello is a freelance writer in East Brunswick, N.J.

Should I stay, or should I go?

Making the decision to accept an overseas assignment is a big career crossroad. Like everything else in life, working abroad has advantages and disadvantages, according to several executives who have done it.

LIFE OUTSIDE THE U.S.
PRO: The experience broadens your perspective.
CON: You can experience culture shock.

CAREER MOBILITY
PRO: International experience is highly desirable as more companies go global.
CON: Out of sight, out of mind. U.S. headquarters forgets about you when you're overseas.

GETTING AROUND
PRO: If you're working in Europe, the continent is so compact, it's easy to visit other countries.
CON: There are issue of security, personal safety and quality of life when working in less-developed nations.

FAMILY MATTERS
PRO: It's a great experience for children. An enthusiastic spouse is a big plus.
CON: The kids may not want to go, depending on their ages and schooling requirements. An unhappy spouse can cut short your overseas stint.

IT'S NOT THE MONEY
PRO: A six-figure compensation package isn't uncommon for IS executives abroad.
CON: Compensation usually is similar to U.S. standards, but you work longer hours because you report back to the U.S. on Stateside time.

YOUR VALUE
PRO: You become a real resource to your company when you return to the U.S. You're promotion material.
CON: You may return to uncertain circumstances — perhaps even no job in your own company.

TECHNOLOGY
PRO: Because most countries keep pace with the U.S., you can stay fairly current with technology as it evolves.
CON: Your technical skills can fall behind your peers in the U.S. In some countries, a simple telephone connection to your homeland can prove elusive.

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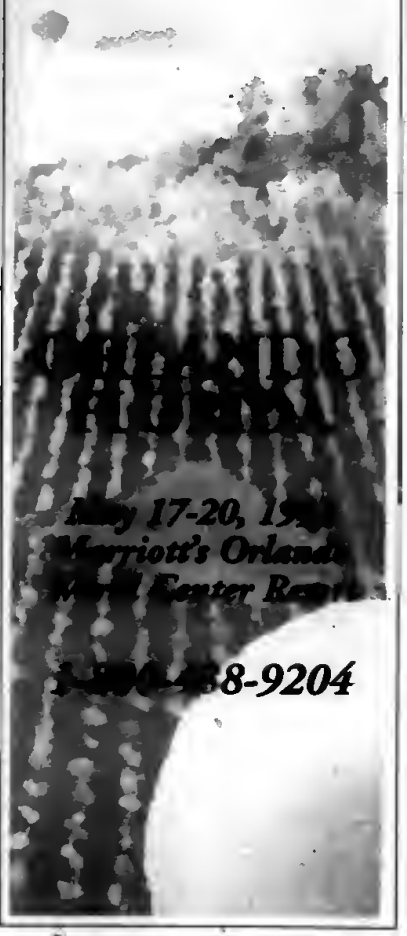

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Houston is one of the fastest growing, most desirable locations in the southwest, with excellent schools, affordable homes and a myriad of cultural and leisure activities. We can offer a very competitive salary and benefits package including relocation. For immediate consideration, please send/fax your resume to our consulting firm: Andrews, Nielsen & Associates, Dept: CW, P.O. Box 3680, Long Beach, CA. 90803. FAX: (562) 434-5251. Our client is an EOE.

FIRST DATA CORPORTION

Programmer Analyst (Systems Administrator) for Unix system administration & d/base administration; install Unix, load OS upgrades, system backup & restore, crash recovery, manage user accounts, quota & permissions, access to remote systems, set up networks, set up & maintain mail servers, set up internet, email & support users; install Oracle, s/ware upgrades, physical d/base design, logical d/base design, design optimization, creation of d/bases, load & maintain d/bases, crash recovery, creation & maintenance of control files, application s/ware tuning, d/base tuning, & use of PL/SQL, Oracle, Shell scripts on HP-9000 & UNIX SVR 4 platforms, Regs Master's in Comp. Sci. or Comp. Engg. Or Comp. Info. Systems, 1 yr exp in job offered or 1 yr related exp such as Programmer Analyst or Assist. Systems Analyst. Related exp must include, in whole or part, setting up networks, systems administration, d/base administration, fine tuning d/base & monitoring using Oracle, PL/SQL, Unix, Shell scripts on HP-9000 & UNIX SVR 4 platforms, $60,429/yr, 40 hrs/wk 8a-5p. Must have proof of legal authority to work permanently in U.S. Send 2 copies of resume & cover letter (no calls) to Illinois Dept. of Employment Security, 401 S. State St. - 7 North, Chicago, IL 60605. Attn: Mary Miles, Ref #V-IL 17217-M "Employer Paid Ad"

Systems Analyst needed for computer software development and consulting firm located in Oak Brook, Illinois. Job duties include: Analyze, plan, design, code, test, and document computer programs. Identify, evaluate and define user requirements for new or modified programs to determine cost and effort required for development. Consult with users to identify process flows, user documentation, additional requirements and technical reports to specify how systems will develop. Prepare data models, process flow diagrams, functional decomposition charts and prototypes to illustrate program flows. Use SQL for programming and Oracle and SYBASE for database development. Use UNIX and Windows NT operating systems. Applicant must have B.S. degree in Computer Science. A foreign degree is acceptable if determined to be equivalent by a recognized authority. Applicant must also have 2 yrs. exp. in the job duties described above or as a systems analyst which includes 2 yrs. exp. in analysis and design of computer applications using SQL, UNIX, and Oracle and 1 yr. exp. with Sybase and Windows NT 40hrs/wk, 8:00 am - 5:00 pm, Mon-Fri, $49,000/yr. Send 2 copies of both resume & cover letter (NO CALLS) to: Illinois Department of Employment Security, 401 South State Street - 7 North, Chicago, Illinois 60605, ATTN: Lori Belisa, Ref# V-IL 18298-B Must have proof of legal authority to work permanently in the U.S. AN EMPLOYER PAID AD.

PROGRAMMER ANALYST 8:30 a.m. - 5:30 p.m., M-F Salary $42,200/yr. Design and develop new applications and maintain/modify existing systems in the insurance field. Work as Relational Database including Ingres and Oracle. Develop SQL scripts and design Oracle Forms and Reports to implement new features for existing Oracle application systems. Develop GUI Windows programs including Foxpro, Visual Basic, and Access to manipulate data and generate reports for internal and external customers. Requirements: Master of Science in Computer Science Coursework must have included the following at the Master level, Database Systems, Data Processing Systems, Windows Programming in C++. Send resume or Lumbermens Mutual Casualty Companies, attn: Patricia K. Neslo, One Kemper Drive, Long Grove, Illinois, 60049. Must show proof of legal authorization to work permanently in the U.S., Employer paid advertisement.

ENGINEER I- Participate as part of a team of engineers responsible for the design and development of hardware and/or software solutions to projects or assigned problems pertaining to technologies and equipment for telecommunications switching, transmission and data networking. Specific assignments may include: project management duties involving preparation of authorizations for expenditure with project justification and financial analysis. Design of environmental and AC/DC power systems, and preparation of detailed installation specifications. Perform support duties for the specification and implementation of new products and services, which are rapidly being developed both internally and externally. Preparation of written reports for upper management regarding the analysis of switch network problem areas, cost/benefit analysis and how best to resolve switching problems. Must have M.S. in Engineering or Computer Science 40 hrs/wk (8-5), $39,000/yr. Send resume to: Oklahoma State Employment Service Office, 110 S. Hartford, Suite 108, Tulsa, OK 74120 (ID# 7207) re: Job Order #294008 EOE

Integration Channel Coordinator Analyze, program, test, document and implement computer programming applications used in the CareData Clinical Information System. Function as resource person to department supervisors, Information Services personnel, and Clinical vendors on computer programming solutions and capabilities. Create and maintain C, C++, X-Windows Based Graphical User Interfaces Programs and clear specific documentation of in-house programming for CareData Clinical Information System Function, as Systems Integrator and as a backup UNIX system administrator. Perform additional duties to promote secure, comprehensive and efficient utilization of MMCI data processing resources. Minimum Requirements: Master's Degree or Computer Science 8:00 a.m. or 9:00 p.m. Rate of pay: $38,646 per year. Must have proof of legal authority to work permanently in the U.S. Submit 2 copies of both resume and cover letter to the Illinois Department of Employment Security, 401 S. State Street - 3 South, Chicago, IL 60605. *Attn: Brenda Kelly, Ref #V-IL 19699-K.* An employer paid ad. No calls.

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This position will be responsible for all activities related to the administration of computerized databases, assigning personnel to various projects involving database management and use, confer with and advise IS team members and users on administrative policies and procedures, technical problems, priorities and methods for various databases.

Will also have technical duties associated with database maintenance and administration in an IBM RS/6000 SP2 AIX Oracle DBMS environment, including database conversions, performance monitoring, performance tuning and other duties essential to keeping all database instances up and performing optimally.

The successful candidate will have a degree in Computer Science or equivalent work related experience, supplemented with 5-7 years data base administration experience. Should be a recognized expert in Database technology and possess excellent communication, interpersonal and team participation skills.

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SAP-SD SPECIALIST

The successful candidate will have a minimum of a Bachelor's Degree in Computer Science. Masters Degree level education preferred. 3-5 years SAP-R3 systems experience is a must. Must have SAP-SD background, experience and a complete understanding of SD interfaces with other SAP modules. Practical experience and knowledge of logistics, manufacturing and high volume distribution is desired.

The position is a leadership role for implementation of the SAP-SD modules. Successful candidate will assist in planning and implementing of SAP-SD. Responsible for user training, identifying problem areas and developing problem resolutions. Responsible for coordinating transfer from current method and system to SAP-SD, ensuring all requirements are addressed and satisfied.

SAP SYSTEMS TECHNICIAN

This position will assist the SAP SD Specialist and Implementation Team. Responsible for user requirements, designing and developing SAP reports using ABAP initially for the SD module and eventually for all SAP modules.

The desired candidate will have a BS Degree in Computer Science and 2-3 years experience in an SAP environment. A strong working knowledge of ABAP report generation is required. Ability to positively interact with and coach users is a must. Must be able to work in a fast paced environment with minimum supervision.

This is an opportunity to join a growing industry leader as a member of their dynamic team. For prompt and confidential consideration, mail or fax resume and salary to: Chuck Dale, Manager, Human Resources, 120 Beach Blvd., New Bern, NC 28562, Fax: (919) 636-4323. EOE

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PO Box 3165, Department CW
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EEO/AA

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Software Engineer. $51K/yr, 8a-5p, 40hr/wk. Dsgn, dvlp, test, prgm, document & maintain comp s/ware systems using RPG/400, CL/400, SQL/400, Query/400 on OS/400 operating systms & IBM AS/400. Masters or equiv deg in Comp Sci, Engg or Applications. No exp reqd. Must have skills to perform the duties of the job. Job located in Duluth, GA. Send resume or apply in person at: GADOL, JO #GA 6188595, 1535 Atkinson Rd, Lawrenceville, GA 30243 or the nearest DOL Field Service Office.

Software Developers, Multiple Openings: Plan, develop, test and document computer programs for maintenance management software system applying advanced database programming and design techniques and utilizing fourth generation programming languages. C++ language, ORACLE, and Microsoft SQL Server in run on computers using Windows and in client/server environment. Requires M.S. in Computer Science with knowledge at M.S level in language; theory; computer architecture, database theory, algorithms, operating system theory, computational theory, and object oriented programming theory. -$50K/yr. EOE. Resume: Datastream Systems, Inc., HR Dept., Box 200, 50 Datastream Plaza, Greenville, SC 29605.

Sr Programmer/Analyst: Develop computer programs for WWW-based banking applications in UNIX, Windows environments; analyze review & modify existing programs to meet international customers' needs; create new programs for testing changes to existing programs; provide program development & change documentation. Must be able to program using object oriented programming in C++, GUI, CGI, HTML, SQL, TCP/IP, socket level interfaces, relational database interfaces & WWW technologies; must have MS in Computer Sci. $56,000/yr. M-F, 9-5. Ref. req'd. Send two copies of resume in Case #70839, PO Box 9868, Boston, MA 02114.

Programmer Analyst - Boston, MA - Analyze requirements & perform logical & physical database design for client/server architecture using ORACLE on UNIX based hardware. Use PL/SQL, PRO*C/C & PowerBuilder. M-F, 9AM-5PM, 40 hrs/wk, $66 500/yr. Req: Master degree in Comp. Sci., Math, any Sci. or Engr field and 1 yrs exp. Send copy of ad and resume to: Doron Semaza, INITIAL TECHNICAL STAFFING, 15 Essex St., 2nd Fl., Paramus, NJ 07652, Ref:SP

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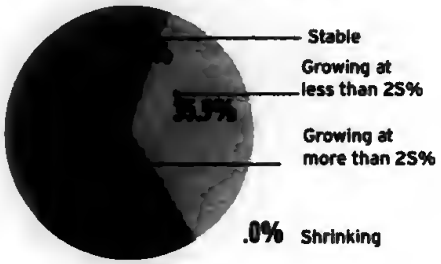

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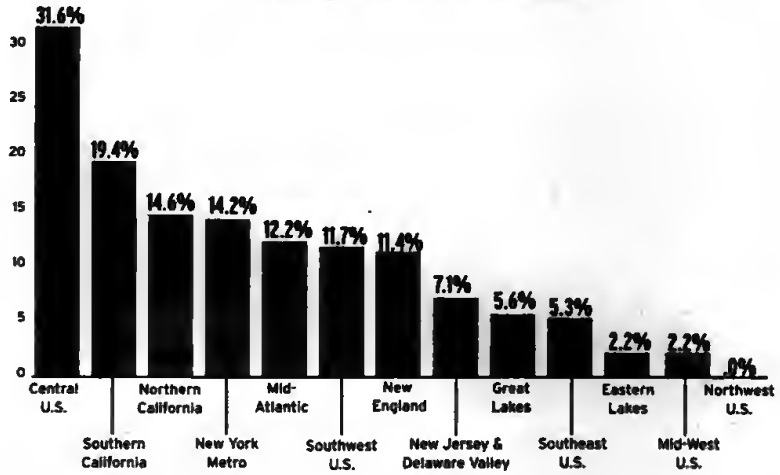

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Software Engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Tuxedo, Powerbuilder 4.0 Oracle and C++. Requirements: Bachelor's Degree in engineering, computer science or related field, three years experience as a software engineer or computer programmer, and knowledge of Tuxedo, Powerbuilder 4.0, Oracle and C++. Salary $60,000/year, 8:00 AM to 5:00 PM, 40 hours/week. Apply: Pennsylvania Job Center, 120 Merchant Street, Ambridge, PA 15003. Job No. 8030115.

Software Engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Powerbuilder 5.0/4.0, SQR 2.5, Sybase SQL Server, and C. Requirements: Bachelor's Degree in Engineering, Computer Science or related field, three years experience as a software engineer or computer programmer and knowledge of Powerbuilder 5.0/4.0, SQR 2.5, Sybase SQL Server, and C. Salary: $45,000/year, 8:00 AM to 5:00 PM, 40 hours/week. Apply: Pennsylvania Job Center, 1270 N. Water Street, P.O. Box 759, Kittanning, PA 16201. Job No. 8030116.

Software Engineer to design, develop and test computer programs for business applications; analyze software requirements to determine feasibility of design; direct software system testing procedures using expertise in Unix, C++, Sybase and Encina. Requirements: Bachelor's Degree in computer science or related field, three years experience as a software engineer or computer programmer, and knowledge of Unix, C++, Sybase and Encina. Salary: $60,000/year, 8:00 AM to 5:00 PM, 40 hours/week. Apply: Pennsylvania Job Center, 2103 Ninth Avenue, Beaver Falls, PA 15010. Job No. 8030128.

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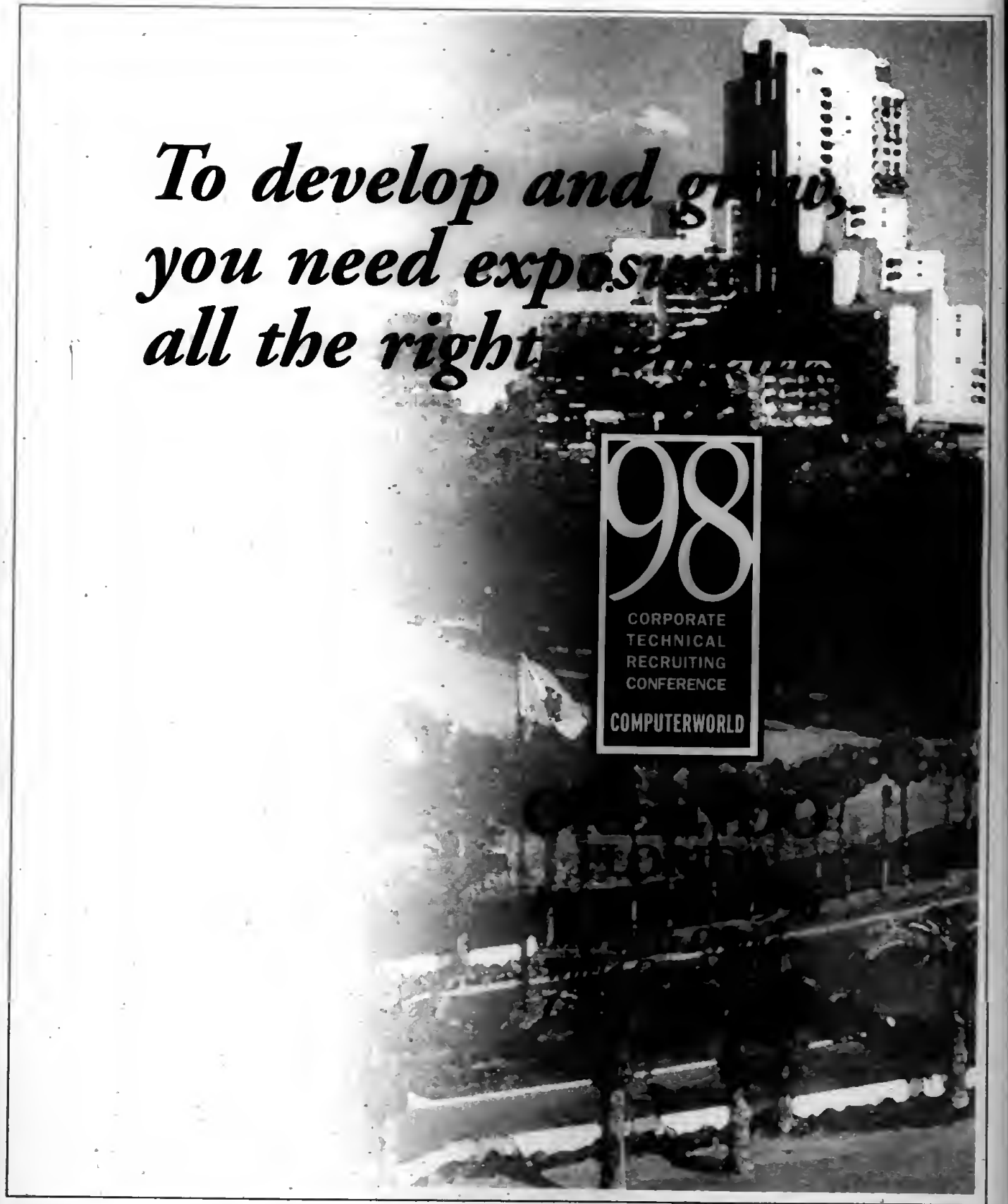
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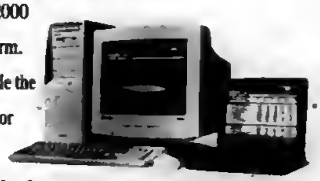

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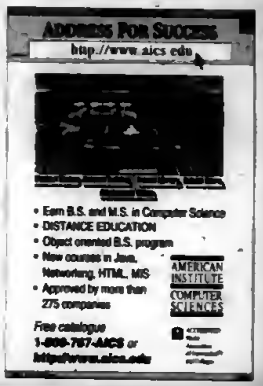
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Middleware moxie

Wall Street is looking to the middle for leading-edge technology.

Shares in firms that provide middleware — software that integrates distributed applications and links legacy applications to new systems — have received greater notice from the market as users struggle to tie their systems together.

And the spike in activity during last month's market plunge made securities firms lean heavily on their middleware applications to make sure the billions of trades cleared between different systems on Wall Street (CW, Nov. 17).

That's why stock prices such as those from BEA Systems, Inc. (Nasdaq:BEAS), New Era of Networks, Inc. (NEON) (Nasdaq:NEON) and Iona Technologies (Nasdaq:IONAY) have risen steadily over the past month and have shown good results since their initial public offering dates (see chart).

"Advanced distributed infrastructure technology like these firms provide often finds the financial world to be a proving ground because of the high-volume, real-time competition in that market," says Rohan Syed, an analyst at Cowen & Co. in Boston. "Even with recent pullback in the market, they still enjoy good valuations."

The risk: Microsoft Corp. (Nasdaq:MSFT) plans to give away its Transaction Server and Message Queuing middleware packages with each copy of Windows NT.

As a result, middleware players will come under severe price pressures, says Ted Schadler, an analyst at Forrester Research, Inc. in Cambridge, Mass.

Even so, Syed says he expects BEA Systems and NEON to generate strong earning per share by 1998, after BEA melds the acquisitions it has made in the past two years into a cohesive unit and NEON expands outside its financial market niche.

— Tim Ouellette

MIDDLEWARE MOVES UP

Recent stock performance for middleware vendors

Exch	Symbol	Name	Now ($)	Wk Net Change	Wk Pct Change
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AMT	AMT	AMERITECH Corp (M)	77.00	4.94	6.8
NASD	ABSD	Ascend Communications	33 38	0.56	2.3
T	T	AT & T (M)	71 94	1 00	14.3
NASD	BNTN	Brittan Systems Inc.	2.25	0 06	1.0
BAY	BAY	Bay Networks Inc.	28.63	-0.31	1.3
BEL	BEL	Bell Atlantic Corp (M)	87.00	3.25	3.9
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BRKT	BRKT	Broadcast.com Technologies	12 00	-1 31	-9.7
CS	CS	Cabletron Systems	18 11	1 75	-2.2
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CNWI	CNWI	Computer Network Tech	4.44	0.00	1.6
DIGI	DIGI	DSC Communications Corp	40 31	1 94	6.3
NETH	NETH	NetManage Inc.	3 00	0 06	2.1
NTRX	NTRX	Netrix Corp	1 00	-0 13	-7.4
NCDI	NCDI	Network Computing Devices	0.00	0.00	7.6
NWK	NWK	Network Equipment Tech.	19.00	0 94	5.8
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NN	NN	Newbridge Networks Corp	45.75	-0.81	-1.7
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ARSX	ARSX	Autodesk Inc	39.00	0.25	11.9
BCSS	BCSS	BCS Systems Inc.	23.75	3.25	0.7
BMCS	BMCS	BMC Software Inc.	60.00	6.38	10.6
BORL	BORL	Borland Int'l Inc (M)	0.38	-3.00	-9.1
BORY	BORY	Business Objects	12.13	1.13	10.2
CAYN	CAYN	Cayenne Software Inc	2.63	0.16	5.6
CNTR	CNTR	Centura Software	1.50	0.00	0.0
CHKPF	CHKPF	Checkpoint Software	8.25	1.00	7.5
COGNF	COGNF	Cognos Inc	20.25	-0.00	-2.6
CA	CA	Computer Associates	35.63	3.50	5.4
CVN	CVN	Computervision Corp	3.69	0.10	5.5
CPWR	CPWR	Compuware Corp (M)	31.00	0.75	11.2
CSRE	CSRE	Comshare Inc	0.00	0.31	2.2
COSFF	COSFF	Cora Corp	2.72	0.00	2.2
DWFR	DWFR	Datawave Technologies Inc	3 13	0.00	0.0
FILE	FILE	Filenet Corp	14.00	1.25	4.6
FRTE	FRTE	Forte Software	30.00	0.38	3.7
FTPS	FTPS	FTP Software Inc (L)	0.38	-0.19	-4.8
HUMCF	HUMCF	Hummingbird Comm Ltd.	34.19	1.00	5.8
HYSW	HYSW	Hyperion Software Corp (M)	44.00	6.00	10.2
IDIC	IDIC	Information Dynamics	15.00	0.75	-4.3
IFMXE	IFMXE	Informix Corp.	6.97	0.00	1.4
INGR	INGR	Intergraph Corp	10.56	0.56	5.0
LEAF	LEAF	Interleaf Inc.	0.88	0.06	1.0
ISLI	ISLI	Intersolv Inc.	15.44	2.88	22.9
INTU	INTU	Intuit Inc.	30.00	0.44	3.6
TLC	TLC	Learning Co (The)	17.31	-0.69	-3.7
LGWW	LGWW	Logic Works	0.00	-0.00	-0.7
MAPS	MAPS	Mapinfo Corp	11.63	1.00	10.6
MATH	MATH	MathSoft	3 19	-0.19	5.0
MCAF	MCAF	McAfee Associates	42.00	-0.94	1.5
MENT	MENT	Mentor Graphics	20.00	6.00	10.0
MFGY	MFGY	Micro Focus	34.25	0.94	2.3
MCRI	MCRI	Micrograph Inc	9.00	0.25	2.3
MSFT	MSFT	Microsoft Corp	137 11	4.25	0.2
OBJS	OBJS	ObjectShare, Inc.	0.75	-0.22	22.6
ORCL	ORCL	Oracle Corp	34.00	0.31	0.8
PMTC	PMTC	Parametric Technology	49.00	0.00	1.6
PSFT	PSFT	Peoplesoft	66.63	2.00	3.0
PTEC	PTEC	Phoenix Technologies	15.00	0.13	0.8
PSQL	PSQL	Platinum Software	8.44	0.00	2.3
PLAT	PLAT	Platinum Technology	20 11	0.00	2.0
PRGS	PRGS	Progress Software Corp	21.19	-0.56	-2.6
RNBO	RNBO	Rainbow Technologies Inc	10.00	1.25	0.5
RDBE	RDBE	Red Brick Systems Inc.	7.25	0.00	-1.3
ROSS	ROSS	Ross Systems, Inc.	3.00	-0.00	1.7
SAPE	SAPE	Sapient Corp	30.75	1.50	2.8
SCOC	SCOC	SCO Inc	0.00	0.31	5.4
SDTI	SDTI	Security Dynamics Tech	19.00	0.00	14.1
SOTA	SOTA	State of the Art	15 13	-0.00	0.0
SSW	SSW	Sterling Software Inc	36.50	1.44	4.2
SDRC	SDRC	Structr Dynamics Research	18.25	-0.00	-2.0
SYBS	SYBS	Sybase Inc	25.00	-0.31	-2.0
SYMC	SYMC	Symantec Corp.	23.00	0.25	1.1
SNPS	SNPS	Synopsys	42.75	6.00	12.9
NASD	SSAH	System Software Assoc.	14.00	0.44	10.6
SYSF	SYSF	Sybersoft Corp	7.00	0.13	1.9
TRLN	TRLN	Transition Corp	0.38	0.50	3.8
AVEW	AVEW	Viewlogic Systems	27.00	3.13	13.8
VERX	VERX	Vmark Software Inc	7.25	0.88	12.7
WALK	WALK	Walker Interactive Systems	10.31	0.38	3.7
WALL	WALL	Wang Data Inc	10.50	1.38	9.1
WANG	WANG	Wang Laboratories Inc	22.00	-0.88	-3.7
AMZN	AMZN	Amazon.com	54 00	6.00	12.4
AOL	AOL	America On-Line	75.06	9.63	0.8
ATHM	ATHM	At Home Corp	20.00	0.50	2.6
CSBV	CSBV	Computerized Comp	13 13	1.19	0.8
EDFY	EDFY	Edify Corp	18.25	0.47	2.8
EXCT	EXCT	Excite, Inc	26.00	-0.19	-0.5
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LCOS	LCOS	Lycos Inc	51.00	-0.50	-1.0
NETC	NETC	Netcom On-Line	19 13	0.13	2.3
NSCP	NSCP	Netscape Comm Corp	27.51	1.38	5.3
OMKT	OMKT	Open Market Inc	10.38	-0.63	-6.3
PSIX	PSIX	PSINet	7.00	1.00	15.7
QDEK	QDEK	Quarterdeck Corp	2.06	-0.18	-7.9
RAPT	RAPT	Raptor Systems	14.50	1.44	11.0
SCUR	SCUR	Secure Computing Corp	12.94	1.00	8.0
SPYG	SPYG	Spyglass Inc	7.00	-0.00	-0.8
YHOO	YHOO	Yahoo! Inc	52.00	0.88	10.2
AMD	AMD	Advanced Micro Devices	22.38	1.00	8.2
ADI	ADI	Analog Devices Inc	31.31	3.44	6.8
CHPS	CHPS	Chips and Technologies	10.75	0.25	1.0
CRUS	CRUS	Cirrus Logic	12.50	0.00	0.0
CY	CY	Cypress Semiconductor Corp	11.75	0.00	4.4
CYRX	CYRX	Cyrix	27.75	0.94	3.5
INTC	INTC	Intel Corp.	80 19	1.56	2.0
LSCC	LSCC	Lattice Semiconductor	36.00	2.75	9.1
LSI	LSI	LSI Logic Corp.	23.81	0.81	3.5
MCRL	MCRL	Micrel Semiconductor Inc	19.75	4.88	14.0
MU	MU	Micron Technology (L)	26.19	2.31	0.7
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NSM	NSM	National Semiconductor	35.00	2.88	8.8
TXN	TXN	Texas Instruments	109.88	6.94	7.2
VLSI	VLSI	VLSI Technology	30.75	-0.88	2.3
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DNCE	DNCE	Data Race Inc.	1.00	0.44	8.0
DYNX	DYNX	Dataram Corp	8.00	0.00	1.9
EMC	EMC	EMC Corp (M)	31.00	-0.06	2.3
EMLX	EMLX	Emulex Corp	15.00	0.38	2.5
ESCC	ESCC	Evans and Sutherland	91.25	0.00	0.0
EXBT	EXBT	Exabyte	10 13	-0.25	-2.6
HSLY	HSLY	Hopkinson Poore Systems	1.25	0.00	5.3
IOM	IOM	Iomega Corp (M)	32.00	2.94	10.1
IPLS	IPLS	IPL Systems Inc	1.00	0.38	20.0
KMAG	KMAG	Kimmel Inc	21.50	1.88	6.8
MTSI	MTSI	MicroTouch Systems Inc.	31.88	-0.50	-0.9
MTIC	MTIC	MTI Technology Corp	13.00	2.63	21.1
PMCS	PMCS	Pericom Semico Inc	0.63	-0.00	-4.0
AQM	AQM	QMS Inc.	3.00	0.13	4.3
QNTM	QNTM	Quantum Corp	38.38	1.00	-4.0
RDUS	RDUS	Radius Inc	0.44	-0.00	12.5
SEG	SEG	Seagate Technology (L)	25.06	-2.31	-9.1
SDIS	SDIS	Standard Microsystems Corp (L)	7.75	-0.00	-3.5
STD	STD	Storage Technology (M)	49.00	0.25	0.0
TEK	TEK	Tektronix Inc	41.81	2.13	5.2
WDC	WDC	Western Digital Corp	22.25	-0.50	-2.2
XIRC	XIRC	Xircom Corp	14.50	1.13	1.5
AMZY	AMZY	American Micart Systems	20.75	-0.25	1.2
ANLY	ANLY	Analysts Int'l	46.44	0.94	2.3
AUD	AUD	Auto Data Processing (M)	57.44	0.88	0.0
BDAM	BDAM	BDM International Inc.	29.25	0.94	44.5
CATP	CATP	Cambridge Tech Partners	41.00	2.00	7.5
CDN	CDN	Candela Corp	42.00	0.81	1.0
CDO	CDO	Comdisco Inc.	00.00	-0.50	-1.2
CPU	CPU	CompUSA Inc (M)	30.00	0.31	0.9
CMRZ	CMRZ	Computer Horizons	33.50	1.00	3.1
CSC	CSC	Computer Sciences	71.94	3.13	8.9
TSK	TSK	Computer Task Group	26.50	1.31	4.5
EGGS	EGGS	Eggheads Discount Software	8.63	-0.00	0.7
EDS	EDS	Electronic Data Systems Corp	48.19	0.00	0.0
ICO	ICO	Inacom Corp	30.81	-0.00	-2.2
INFI	INFI	Information Enterprises	0.19	0.25	1.1
IEA	IEA	Kranz Inc	11.25	1.13	14.2
MICA	MICA	Micronics Inc	10.01	1.44	6.1
PAYX	PAYX	Paychex (M)	42.25	3.11	2.5
PMS	PMS	Policy Management Sys. (M)	61.13	0.00	0.0
REY	REY	Reynolds and Reynolds	18.88	1.19	0.7
SCBI	SCBI	SCB Computer Tech Inc	19.88	1.88	10.4
SEIC	SEIC	SEI Corp	42.25	-0.25	-0.5
SMS	SMS	Siemens Medical Systems (M)	63.88	0.94	1.5
SSPE	SSPE	Software Spectrum Inc	14.63	0.03	4.1
SDPS	SDPS	Standard Data Systems	25.21	0.13	0.5
VSTY	VSTY	Vanstar Corp	12 19	0.00	0.0

KEY: (M) = New annual high reached in period (L) = New annual low reached in period

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Spec allows PC parts swapping

▸ *But increased component exchange could mean headaches for IS*

By Kim Girard

A NEW HARDWARE standard that creates a universal receiving bay within PCs to ease the swapping of components would let users build their own PCs according to need. But it also could lead to more management headaches.

Named "Device Bay," the IEEE 1394 standard eventually would let users hot-swap hard disk, CD-ROM drive, optical drive and digital video disc (DVD) ROM units, as well as interchange the devices among PCs. Systems that use the components would automatically recognize peripherals installed, meaning users could easily add a second hard drive or battery using the PC or portable as a building-block platform.

But it could be some time before that option is available.

Intel Corp.'s preliminary chip design supporting the standard won't be out until at least January, and Microsoft Corp. officials said they don't expect hardware to be available until the second half of next year.

PRODUCTS ON DISPLAY

The company showcased some of the pending storage products on the Comdex/Fall '97 show floor.

And analysts said it is likely users will wait until 1999 to use Device Bay, as Windows 98 isn't expected to support it. It is unclear what operating system it will work with.

"It sounds like it would be a great idea if it truly works," said Kenneth Bronson, program manager at Anheuser-Busch, Inc. in St. Louis.

But for companies trying to simplify systems management, the Device Bay standard may prove a double-edged sword. "[Information technology] is trying to gain more control, and Device Bay works against that," said Chris Goodhue, an analyst at Gartner Group, Inc. in Stamford, Conn. "If I can change a machine every day, what impact might that have on the network? Small changes to a system can impact the way the network operates or whether it operates at all."

"I see a lot of potential for it but like [Universal Serial Bus], it will take a while before it's useful," said John Bennett, systems administrator at Muchmore & Wallork, a law firm in Phoenix. Bennett said he was skeptical of Microsoft's commitment to the standard and questioned how long it would take to roll out products.

"One of the biggest battles I have is trying to individualize the computer to the worker, and this would help with that," said Darryl Mileczarek, chief information officer at EMS, Inc. in Phoenix, which is currently upgrading from 486-based machines to Pentium machines.

"But the biggest battle is to try to get the money to upgrade technology.... If someone who needs DVD can pop one in, that sounds great. But it means another hardware change out, and that's a tough sell," he said. □

IBM unwraps Java client

CONTINUED FROM PAGE 1

comes with a free copy of ESuite, a lightweight, Java-based business productivity suite. It will let users locally process Java applets and access Windows, OS/2 and terminal applications.

IBM officials admitted that the Network Station isn't for all of the company's wide-ranging hardware customers, but they expect it will account for 30% of desktop sales by 2000.

IBM claims the multilingual Series 1000 gives users more to look forward to than what one official snidely dismissed as Microsoft's "Why bother terminal."

Analysts said Microsoft's terminals — which will be produced by hardware makers, not Microsoft — were designed to work with its forthcoming Hydra server software. Hydra will let terminals and non-Windows users run Windows applications.

IBM and other observers object to the fact that the Windows-based terminals can't process Java applets locally. A Microsoft spokesman said running applications locally defeats the server-centric nature of network computing.

Microsoft officials said users will be able to run Java applications off its NT server, but that also limits Windows-based terminal users to an NT server and limits user choice, said Neil MacDonald, an analyst at Gartner Group, Inc. in Stamford, Conn.

"We're not recommending that our clients buy any of these [Windows-based terminal devices] at this time," MacDonald said.

He warned users to consider issues such as licensing costs for the associated Windows operating systems at the client and server level, which have yet to be established, and the lack of a local Java Virtual Machine, which forces users to run Java from the server.

Beverly Russell, director of information systems at E. D. Smith & Sons Ltd., a $120 million jam and jelly company in Wynona, Ontario, said she has put off buying network computers because she has been waiting for IBM's Java-based network computer.

"I've been waiting for IBM to incorporate Java into its [network computer] so I don't have to complicate my network needlessly with an NT server. I don't want to run Citrix. I don't want to run those PC applications."

Although he said "it can be a little slow," David Alarie, a regional information systems director at Amcore Financial, Inc. in Rockford, Ill., said he likes IBM's approach to thin clients.

WINDOWS ENTHUSIASTS

The Windows-based terminals have their fans, too. Scott Lien, manager of information technology at Fastenal Co. in Winona, Minn., said his company is piloting about 50 Windows-based terminals, along with the beta version of Hydra.

Lien estimated his company can save up to 50% in support and hardware costs with Windows-based terminals. But the machines have their downside: They lack audio and video support, something that will come with Citrix's Picasso add-on to Hydra. □

Live from Las Vegas:

Iomega's booth was hot this year as hundreds of showgoers checked out the company's new disk drive. Even hotter was the company's gift to Comdex/Fall '97 attendees: ubiquitous yellow clickers that defined the sound of this year's show. The gadgets could be heard throughout the convention center, provoking one reporter to yell, "Just stop!"

SWEATIN' TO HANDHELDS

The **Philips Electronics** booth took on an industrial edge. Against the whooping, stomping and grinding of an industrial backbeat, dancers clad in tank tops and shorts whipped chains on the stage as a childish female voice chanted. "Remember the Industrial Age. ... Remember the sweat."

What any of this had to do with handheld devices and other miscellaneous gadgets, we don't know. But some in the gyrating flock clutched cellular phones and Velos machines, the company's handheld device.

CHRISTMAS CAME EARLY

Fujitsu adorned a stage within its booth with a festive Christmas display, complete with a tree and a toy train circling it. Many dull-eyed and weary showgoers sat in front of the lonely display, nibbling candy canes at 3 p.m. on Wednesday, listening to Christmas carols. The next demonstration wasn't until 4 p.m.

SAMSUNG SPACE CREAM

Samsung doled out some tasty treats at its booth: freeze-dried Neapolitan ice cream, the same stuff astronauts allegedly munch in space. "It's fun; it's a living," said Larry Alexander, who wore a bright orange astronaut-style jumper and handed out silver packages of the stuff. Alexander said he got to shake hands with none other than Bill Gates at a party earlier in the week.

Comdex/Fall '97 featured handheld devices and bizarre marketing techniques

STRESS REDUCTION A HIT

The perennial stress-reduction booth at Comdex appeared to have some of the most intent users. Among the weary who strolled over were exhibitors and potential buyers. "This is the best demo I've had all day," said one IT manager, who asked to remain anonymous.

BACK TO THE FUTURE

For those who took a minute to stray from the chocolate-chip cookie wielding component people who inhabited a makeshift booth at the entrance to the Las Vegas Convention Center, there were live computer women — complete with platinum wigs, silver stiletto heels, dark shades and metallic microminiskirts. □

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COMMENTARY

Ellison takes center stage

By Dan Gillmor

It was one of those rare Silicon Valley moments — more like an hour, actually — as Larry Ellison commanded the stage of the hotel ballroom. He was in his element, and he typified what makes the Valley so dynamic and, at times, strange.

The occasion was the annual dinner of a valley institution, the Churchill Club. The organization regularly sponsors public-affairs meetings. This year's speakers already included Microsoft's Bill Gates and other technology luminaries.

Gates delivered what amounted to little more than a Microsoft commercial, then swatted at softball questions posed by one of his employees. It was a waste of his time, not because he was in enemy territory, but because he didn't show off what even his enemies agree is a prodigious brain.

Ellison didn't make the same mistake. The multibillionaire CEO of Oracle sipped a Coke, prowled the stage like a hungry jungle cat and launched into a wide-ranging discourse that, true to form, blended zeal and intellect, swagger and contradiction. The questions came from the audience.

His first words were a prediction of Microsoft's demise. It's coming, he insisted, because Microsoft doesn't understand what's needed in the next generation of hardware and software — the connected era. The PC, he said, is a device "only an engineer could love, designed by engineers for engineers." PCs and software, especially Microsoft products, grow more features as hardware gets faster. The complexity belongs in the network, not the client machine, he said.

Information is becoming another networked utility, like electric power and the telephone, Ellison said. The phone system is a great example of how networks should work, because the phone is simple while the phone system is complex in the background. "You never back up your telephone," he observed. Meanwhile, Windows NT grows more complicated each year.

Microsoft also faces trouble because it fundamentally has no friends, having taken all it could get from temporary allies and partners over the years, Ellison said. John D. Rockefeller was nothing compared with Gates, he said.

Then came some contradictions. If Microsoft is in deep trouble, as Ellison claimed, why did he volunteer to "hold the government's coat if they want to go after Microsoft"? Why would he need to?

And why, as a new member of the Apple board, did Ellison approve Microsoft's $150 million investment in Apple and Apple's agreement to make Internet Explorer the default browser with new computers? Purely pragmatic, he responded. The war was hurting Apple more than Microsoft, and Macintosh users wanted the Microsoft applications.

This was the same Ellison who wondered aloud last spring about buying Apple and putting his best buddy, Steve Jobs, back in charge. He didn't have to buy Apple for the latter goal to come true. Of all computers, only the Macintosh is a "lifestyle brand," he said. The next CEO had better get used to bright lights. And look for low-cost network computers from Apple that will shake up the industry.

What else? Ellison ranted about the sorry state of public education in the U.S. and plugged an education products company he's forming with Michael Milken. He sneered at rivals Informix and Sybase. And more.

It was a vintage performance by an over-the-top virtuoso. I wouldn't have missed it. □

Gillmor is computing editor at the San Jose Mercury News. *His Internet address is dgillmor@sjmercury.com.*

Memo to Redmond: Intervention is inevitable

By David Moschella

The next time someone says government has no business intervening in a free-market economy and should back off from any attempts to restrain Microsoft, ask him two simple questions:

Isn't it true that the federal government has a 40-year history of close involvement with this industry's competitive evolution? And isn't it clear that we're all better off for it?

Consider the record. In 1956, IBM agreed to a consent decree that kept it out of the processing services business until 1979, encouraging many new entrants into the eventually booming time-sharing business. During the 1960s and '70s, sustained pressure by governments around the world forced IBM to let peripherals vendors such as Memorex, Telex, Fujitsu and Hitachi build products compatible with the S/370 mainframes.

Perhaps most important, U.S. government jawboning played a major role in IBM's 1969 decision to unbundle its hardware and software products, enabling the first real growth of an independent software industry and the eventual creation of the plug-compatible mainframe business by Amdahl.

By any standard, that's an impressive record. Naysayers entirely miss the point by focusing on the fact that the government's 1969 suit against IBM was dropped.

On the communications front, the story is similar. In 1968, the U.S. forced AT&T to allow non-Bell System equipment to be connected to its networks. In 1978, the feds supported long-distance service competition. Then in 1982, the government courageously broke up the Bell System, triggering an explosion of new network services.

Once again, the naysayers missed the point. They like to dismiss these achievements as long-overdue efforts to correct for a government-endorsed telephone monopoly. They ignore the reality that AT&T was regulated because it was a mooopoly, not the other way around.

Indeed, business history strongly suggests that long-term monopoly power eventually leads to government intervention. Try to find any major examples otherwise. In 1934, it was Congress that forced William E. Boeing to break up his dominant United Aircraft and Air Transport Corp. into separate hardware and services firms that eventually became The Boeing Co. and United Airlines.

Just as Microsoft is doing today, IBM, AT&T and William Boeing all argued that attempts to limit their scope and ambitions were some combination of illegal, unnatural, unfair, unnecessary, counterproductive or (as a last resort) against the national interest. All brought in the best lawyers money could buy, all showed a real talent for obfuscation and delay, and all eventually yielded to the government's will, then went on to thrive.

Microsoft has decided to ignore that history, flaunting its intention to continue to go for the jugular in any business it chooses. That arrogance is also a traditional part of the pattern. The previous examples all suggest that Microsoft's feistiness will continue until the government reasserts, directly or indirectly, the basic rule of the game: A company can have either total monopoly power or total competitive freedom, but not both.

The message to Microsoft is simple: Make some visible effort to constrain your own power or let the government do it for you. For the rest of us, the message is also clear. Government can never be even close to the whole solution, but all evidence suggests that, once again, it will play an essential and highly constructive role in our industry's long-term competitive evolution. □

Moschella is an author, independent consultant and weekly columnist for Computerworld. *His Internet address is david_moschella@cw.com.*

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altcw

Dispatches & images from the fringes of the electronic frontier

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Laptops allowed on the U.S. Senate floor:	0
Spittoons on the U.S. Senate floor:	2
Telecommuters who work barefoot:	33%
Neo-Nazi Internet sites:	87
Percentage of international telephone calls that are actually faxes:	40%

Source: USA Today, Arlington, Va.; Telecommute America, Washington; Simon Wiesenthal Center, Geneva; Aberdeen Group, Inc., Boston

@EASE CARD

Most U.S. smart-card projects are small-scale pilots. But Phoenix-based Touch Technology International is rolling out a high-volume smart-card system for the mammoth Armed Forces Financial Network, starting in Hawaii. About 5,000 "@ease cards" will be issued to military personnel for use at Hickam Air Force Base in Honolulu and nearby merchants.

Robotic valet parking

Ready to have your car parked by fuzzy logic? Robotic Parking, Inc. in Tampa, Fla., has developed an automated system that can quickly park and retrieve multiple cars at the same time — without ramps, squealing wheels or dented doors.

The automated garage works this way: Drive the car into a bay, leave it on a platform and get a ticket. The advanced transport technology used on assembly lines will carry and lift the platform to an open cubbyhole. The driver uses the ticket to retrieve the car to the original bay, where it arrives in a forward-drive position.

A fuzzy logic application choreographs the platform movements. A Windows NT-based PC monitors the system for problems.

Inside Lines

Will the real Bill Gates please stand up?

Comdex-goers were doing double takes when they saw Bill Gates handing out promotional literature for Windows 98 at Comdex. Only it wasn't Gates; it was a Gates double. And the product was "Winblows 98" from "Microsoft." There really is such a product, it turns out. The parody CD features a virtual Bill Gates pet that grows as you give it money, a Monopoly-like board game, a shoot-'em-up battle against bugs and viruses and other stuff. The producer is Palladium Interactive in Larkspur, Calif., which makes a Myst takeoff called Pyst.

Stop the presses, already

Evidently, Bill Gates' adoring fans have had their fill of The Rich One's prognostications. Gates' book, *The Road Ahead*, has been priced to move by both Amazon.com and BarnesandNoble.com. They list the book, with interactive CD-ROM, for $12.76, which is a nice discount on the book's initial $29.95 price. But head to the Borders bookstore chain for the best deal: just $2.98, or more than 90% off.

Don't believe everything out of Redmond

The Department of Justice may want to check this out. A puzzled reader informs us that his Microsoft Outlook 97 scheduling application tells him that Thanksgiving will take place on Wednesday, Nov. 26 this year. It doesn't say when to watch for the giant Underdog balloon in the Macy's parade.

Repeat after me

Novell this week will unveil a new version of its Novell Replication Services that features better network administration and performance boosts, sources close to Novell said.

Steal this machine – please!

Put this one in your operations manual. One user related how he was frustrated while trying to connect an ancient PS/1 PC to an AS/400. The answer? Not a motherboard upgrade, a new communications card or better networking infrastructure. Instead, "It got stolen, and we were the happiest people alive," he said.

Unitix just keeps getting harder to find

Unitix Technologies is tapping the rich vein of users who still want the reliability of their CICS applications but want it off the mainframe and in the Unix world. But Unitix may have been too successful. Officials at the Phoenix company said IBM has banned them from participating in an upcoming CICS technology conference because they are too competitive — even though they have been involved in previous events in past years.

The same game

One of the first moves made by new Oracle system product marketing czar Mark Jarvis was to strip the Personal prefix from its mobile database, which is now just plain Oracle Lite. One of the reasons: to stop Oracle employees from downplaying the product's name to PCMs. "When a sales rep says that, customers are going to think the guy came from another planet," Jarvis said. And what about Oracle's upcoming Object Database Designer tool, which is known as ODD in acronym form? "We might change that one, too," he said.

Here's another sign that Apple is history. Stanford University has received about 2,000 boxes of memorabilia dating to the computer pioneer's birth 21 years ago in a Silicon Valley garage. Besides documents, artifacts include an Apple I and prototypes of computers that never shipped. "It's really a longitudinal picture of Apple from its lifetime," according to a curator of Stanford's history of science and technology collection. You don't have to clean out your garage or box up your history; just send a few news tips or rumors to News Editor Patricia Keefe at (508) 820-8183 or patricia_keefe@cw.com.

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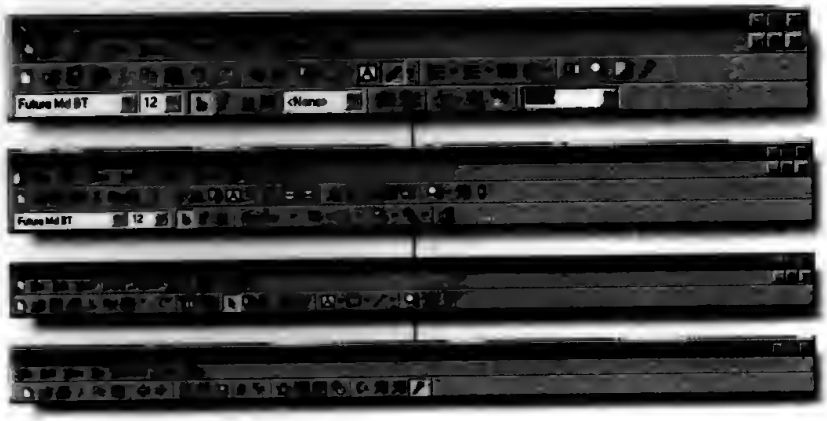

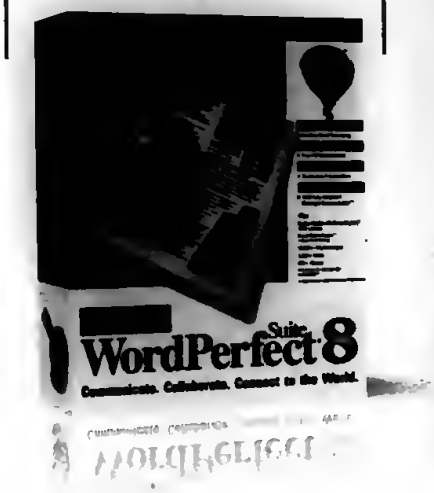

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